5th Pan Arab Liver Transplant Society Congress

17-18 January 2013
Doha, Qatar
Dear visitors and colleagues,

It gives me great pleasure to welcome you to the State of Qatar and to the Fifth Pan Arab Liver Transplant Society Congress held in Doha.

Hamad Medical Corporation is proud to host this year’s congress which provides a valuable scientific forum for the inter-professional discussion on various matters of regional and international importance concerning liver transplantation in the Arab World.

The decision to host this congress stems from our commitment to promote research and education efforts that help to address the current and future, local and regional health needs. Through supporting scientific societies and organizations such as the Pan Arab Liver Transplant Society (PALTS), The Transplantation Society (TTS) and the International Liver Transplantation Society (ILTS), we are confident that together we can find solutions to current challenges and help deliver better care to our patients.

One of the challenges we have set ourselves at HMC is to establish a sustainable organ transplant program, based on international best practice standards that meet the needs of our growing population throughout the nation.

I am proud of the dedicated efforts of the teams that have established our transplant program which has grown rapidly in only a few years and has garnered the recognition of renowned institutions such as TTS and The United Network for Organ Sharing (UNOS). The Qatar Center for Organ Transplantation’s renal transplant program continues to help more patients each year; and our liver transplant program, established in 2011, is continually gaining momentum.

It is through conferences such as this one that we can share our knowledge and experience and work toward a shared goal of providing the best possible treatment and care for our patients. Our respective organizations have each achieved a great deal in providing improved services based on evidence based care – by joining forces, especially in targeted research, we can achieve even more in organ transplant care for the benefit of future generations.

Hanan Al Kuwari, PhD.
Managing Director
Hamad Medical Corporation
Congress President’s Message

Dear Colleagues,

It is with great pleasure that we welcome you to the 5th Pan Arab Liver Transplant Society Congress, held this year in the State of Qatar. Your personal investment of time and effort to attend and contribute to this important event is greatly appreciated.

The Pan Arab Liver Transplant Society (PALTS) was founded in 2006 to encourage cooperation between liver transplant programs in Arab countries. The Society has already conducted four (4) previous congresses with great success; this fifth Congress is a continuation of that effort to create a scientific forum for exchanging experiences between the Arab countries and the international community in the field of liver transplantation.

The congress program will includes reporting sessions by Arab liver transplant programs, state-of-the-art lectures, organ donation sessions, roundtable discussions, free paper presentations, in addition to some social activities.

We have invited around 80 international and regional experts in the field, and more than 350 have registered to attend and share their experiences during this event. We also received over 100 abstracts submitted for either oral or poster presentations during the congress.

I would like to particularly thank Hamad Medical Corporation (HMC) for hosting this congress. HMC’s dedicated support and continued commitment were instrumental in making this event possible. Also, I would like to thank the contributing societies (TTS and ILTS) and our sponsors for their clear vision and strong support.

Finally, I thank you all for coming and wish you a fruitful congress and an enjoyable stay in Qatar.

Yours Sincerely,

Prof. Hatem Khalaf
Congress President
Scientific Committee
Muna Al-Maslamani  
Muneera Al-Mohannadi  
Ajayeb Al-Nabet  
Enas Al-Kuwari  
Mahammed Chaudery  
Khalid El-Eji  
Mohammed Elmasry  
Abdelnasser Elzouki  
Henrik Gjertsen  
Mohamed Khairat  

Ahmed Khalil  
Ahmed Mahfouz  
Faisal Malmstrom  
Ahmed Mazrakshy  
Zeyd Merenkov  
Bakr Nour  
Kakil Rasul  
Rafie Yakoob

Awards for Best Presentations

The Medical education Department at Hamad Medical Corporation is offering awards for the best Oral and Poster presentations. The awards will go for the best two (2) oral presentations and the best three (3) poster presentations. The awarding committee will review the abstracts and select the presentations. The prizes will be announced during the closing ceremony and will be delivered by Prof. Ismail Helmy, Deputy Director of Medical Education at Hamad Medical Corporation.

It is worth emphasizing that:

1. The evaluation process will only include oral and poster presentations related to submitted abstracts. All other presentations will be excluded (e.g. invited speakers, state-of-the-art lectures, etc.)

2. The committee will follow many objective criteria to select the best presentations including strict adherence to the allocated presentation time, failure to comply with the designated time will automatically exclude you from winning.

Awarding Committee:

Prof. Andrew Burroughs: Vice President of British Society Gastroenterology, Professor of Hepatology, University College London, UK

Prof. Bakr Nour: Professor of Surgery and Associate Dean for Clinical Affairs, Weill Cornell Medical College–Qatar (WCMC–Q).

Prof. George Mazariegos: Chief, Pediatric Transplantation, Children’s Hospital of Pittsburgh

Invited Guests

International Guests

Nancy Ascher (USA)  
Marina Berenguer (Spain)  
Dieter Broring (KSA)  
Andrew Burroughs (UK)  
Pierre Clavien (Switzerland)  
Francis Delmonico (USA)  
Richard Freeman (USA)  
John Fung (USA)  
Nigel Heaton (UK)  
Stefen Hubscher (UK)

SungGyu Lee (Korea)  
Chung-Mai Lo (Hong Kong)  
George Mazariegos (USA)  
Paul McMaster (UK)  
Vassilios Papalos (UK)  
Jacques Pirenne (Belgium)  
Khaled Selim (USA)  
Satoru Todo (Japan)  
Andreas Tzakis (USA)

Regional Guests

Faisal Aba Alkhail (KSA)  
Amir Abdel-Aal (Egypt)  
Mohd Abdel Wahab (KSA)  
Khalid Abdullah (KSA)  
Ayman Abdo (KSA)  
Ali Aboutwerat (Libya)  
Riaz Ahmed (KSA)  
Abeer Al-Gharabally (Kuwait)  
Hadeel Almana (KSA)  
Nasser Al-Masri (KSA)  
Mustafa Al-Mousawi (Kuwait)  
Adel Al-Qutub (KSA)  
Khalid Alnaamani (Oman)  
Wael Al-O’hali (KSA)  
Mohamed Al-Qahtani (KSA)  
Mohamed Al-Sagheer (KSA)  
Mohd Al-Sebayel (KSA)  
Hamad Al-Suhaihbi (KSA)  
AbdelJaleel Alwan (KSA)  
Mohamed Al-Zaabi (KSA)  
Mohamed Bahaa (Egypt)  
Abdallah Bashir (Jordan)  
Kamel Bentabak (Algeria)  
Ahmed ElAffandi (UK)

Mohamed El-Shobary (Egypt)  
Mohamed El-Wahsh (Egypt)  
Gamal Esmat (Egypt)  
Mohamed Fathy (Egypt)  
Waleed Al-Hammoudi (KSA)  
Assad Hassoun (Iraq)  
Basem Hegab (KSA)  
Amir Helmy (Egypt)  
Adel Hosny (Egypt)  
Tarek Ibrahim (Egypt)  
Refaat Kamel (Egypt)  
Tahar Khalifallah (Tunisia)  
Mohamad Khalifeh (Lebanon)  
Tarek Mahmoud (Kuwait)  
Ibrahim Marwan (Egypt)  
Ibrahim Mostafa (Egypt)  
Hesham Negmi (KSA)  
Ashraf Omar (Egypt)  
Omar Sherif Omar (Egypt)  
Rasha Refaay (Egypt)  
Bassam Saeed (Syria)  
Ayman Salah (Egypt)  
Faisal Shaheen (KSA)  
Sameer Smadi (Jordan)  
Medhat Sabet (Egypt)  
Khaled Yassen (Egypt)  
Ayman Yosry (Egypt)
SCIENTIFIC PROGRAM

First Day: Thursday 17 January, 2013

07:00 - 08:00 Registration
08:00 - 09:00 Opening Ceremony

Guest of Honor: Dr Hanan Al-Kuwari, Managing Director, Hamad Medical Corporation, Qatar.

Panel: Abdulatif Al-Khal (Qatar), Yousef Al-Maslamani (Qatar), Abdullah Al-Ansari (Qatar), Saad Al-Kaabi (Qatar), Al-Hareth Al-Khater (Qatar), Ajayeb Al-Nabet (Qatar), Ibrahim Mostafa (Egypt), Mohamed Al-Sebayel (Saudi Arabia)

Hatem Khalaf (Qatar)
Congress President

Mohammed Al-Sebayel (KSA)
President, Pan Arab Liver Transplantation Society (PALTS)

Ibrahim Mostafa (Egypt)
President-elect, Pan Arab Liver Transplantation Society

Francis Delmonico (USA)
President, The Transplantation Society (TTS)

Richard Freeman (USA)
President, International Liver Transplantation Society (ILTS)

Hanan Al-Kuwari (Qatar)
Managing Director, Hamad Medical Corporation

09:00 - 09:30 State-of-the-art Lecture

Chairpersons: Andrew Burroughs (UK), Abdulatif Al-Khal (Qatar), Abdullah Al-Ansari (Qatar)

Early Lessons in Liver Transplantation
Paul McMaster (UK)

09:30 - 11:30 Plenary I: Liver Transplantation in the Arab World
(Each presentation 10 minutes)

Chairpersons: Richard Freeman (USA), Yousef Al-Maslamani (Qatar), Bassam Saeed (Syria)

Liver Transplant Activity in the Arab World
Hatem Khalaf (Qatar)

Liver Transplantation in Saudi Arabia
Mohammed Al-Sebayel (KSA)

Egyptian Liver Transplant Registry: 11 Years Experience
Ibrahim Marwan (Egypt)

Liver Transplantation in Jordan
Abdalla Bashir (Jordan)

Liver Transplant Activity in Lebanon
Mohamad Khalifeh (Lebanon)

Discussion

Live Donor Liver Transplant in Iraq: A Venturous Mission in The Least Expected Territory but Largely Needed
Assad Hassoun (Iraq)

Liver Transplantation in Tunisia: An Update
Tahor Khalfallah (Tunisia)

Long-Term Follow-up of Adult and Pediatric Liver Recipients in Algiers
Nabil Debzi (Algeria)
Liver Transplant Activity in Libya
Ali Aboutwerat (Libya)

Starting the Liver Transplant Program in Qatar
Muneera Al-Mohannadi (Qatar)

Discussion

11:30 – 12:00 Coffee Break

12:00 – 14:00 Plenary II: Achieving Best Outcomes
(Each presentation 15 minutes)

Chairpersons: John Fung (USA), Kakil Rasul (Qatar),
Mostafa El-Shazly (Egypt)

Allocation of Organs: Balancing Recipient and Donor Risks
Pierre Clavien (Switzerland)

Selection Criteria for Liver Transplantation in Patients with
Hepatocellular Carcinoma
Nancy Ascher (USA)

Role of LDLT for the Treatment of HCC
Satoru Todo (Japan)

Early Determinants of Successful Outcome in Pediatric Liver
Transplantation
George Mazariegos (USA)

Markers Of Operational Immune Tolerance after Pediatric Liver
Transplantation in Patients under Immunosuppression
Martin Burdelski (KSA)

Immunosuppression: Too Much, Too Long, and Trials?
Andrew Burroughs (UK)

14:00 – 15:00 Lunch Break

15:00 – 17:00 Plenary III: Special Issues in Liver Transplantation
(Each presentation 15 minutes)

Chairpersons: Bakr Nour (Qatar), Amr Helmy (Egypt),
Hussien Elsyey (KSA)

Quality Control Projects for Training in Liver Transplantation
Vassilios Papalaius (UK)

Liver/Intestinal Multivisceral Transplantation
Andreas Tzakis (USA)

Combined Liver and Kidney Transplantation
Jacques Pirenne (Belgium)

Do Livers Always Protect Simultaneously Transplanted Kidneys in
Allosensitized Recipients? Do They Even Protect Themselves?
Ahmed Adel Hassan (Qatar)

Metabolic Disorders in Liver Transplantation
Magdy Khalil (Egypt)

Donor-Motivational Aspects in LDLT: From the Donor’s Perspective
Khaled Abou El Ella (Egypt)

17:00 – 17:30 Coffee Break

17:30 – 19:30 Plenary IV: Liver Transplantation in the Arab World: Center’s
Experience
(Each presentation 10 minutes)

Chairpersons: Refaat Kamel (Egypt), Mohamed Al-Saghier (KSA),
Abdelnasser Elzouki (Qatar)

Expanding Donor Selection Criteria in Live Donor Liver
Transplantation: Should We?
Adel Hosny (Egypt)
Liver Transplantation at El-Mansoura University: Experience and Outcome  
Mohd Abdel-Wahab (Egypt)

LDLT, Jordan Hospital Experience  
Saeb Hammoudi (Jordan)

Clinical Outcome of Qatar Residents Undergoing Liver Transplantation Abroad  
Rafie Yakoob (Qatar)

De Novo Hepatitis B in Egyptian Patients Undergoing Liver Transplantation In China  
Mohd El-Saadany (Egypt)

Recurrence of Hepatitis B after LDLT  
Anwar Jarrad (Jordan)

Liver Biopsy as Rejection Criteria in LDLT: Analysis of 94 cases  
Woleed Al-Hamoudi (KSA)

Liver Transection Techniques in Donors for Living Donor Liver Transplantation  
Sameer Smadi (Jordan)

10-Year Experience of LDLT for HCC: Where are We Now?  
Mohamed Fathy (Egypt)

Increasing the Donor Pool; The Consideration of Pre-Hospital Cardiac Arrest in Controlled DCD Donation for Liver Transplantation  
Ahmed Elaffandi (UK)

19:30 - 20:30  
Women in Transplantation (WIT) Networking Event  
Chairperson: Nancy Ascher

Second Day: Friday 18 January, 2013

07:30 - 10:00  
Free Oral Presentations  
(Each presentation 8 minutes)

Chairpersons: Rafie Yakoob (Qatar), Hamad Al-Suhaibani (KSA), Nagy El-Mosry (Qatar), Amr Abdelaal (Egypt)

Cardiovascular Risk Assessment of the Liver Transplant Candidate  
Muaweih Ababneh (Jordan)

Cystatin-C vs Creatinine related e-GFR as Predictor of Death on the Pre-liver Transplantation Population  
Yasser M. Kamel (KSA)

Perioperative Factors and Conditions Affecting Intraoperative Sodium Homeostasis  
Jana Hudcova (USA)

Congenital Absence of Portal Vein and Role Of Liver Transplantation: A Case Report and Review Of Literature  
Samy Kashkoush (Canada)

Infection Complications and Pattern of Bacterial Resistance in Living Donor Liver Transplantation: A Multicenter Epidemiological Study in Egypt  
Ahmed Mukhtar (Egypt)

Effect Of Discordance Between Pre-Operative Evaluation and Explant Histology on Outcome of LDLT for Hepatocellular Carcinoma  
Asmaa Gomaa (Egypt)

Primary Liver Malignancy in Children: Outcome with Liver Transplantation  
Mohammad Hamshow (KSA)

Microsurgery Technique for Hepatic Artery Reconstruction in Over 300 LDLT  
Kareem Sallam (Egypt)
Biliary and Vascular Complications following Liver Transplantation from Donors After Cardiac Death
Mamoun Al-Basheer (Jordan)

Hepatic Venous Outflow Obstruction in Living Donor Liver Transplantation
Aydincan Akdur (Turkey)

Endovascular Management of Early Hepatic Artery Thrombosis after LDLT
Omar Abdelaziz (Egypt)

Percutaneous Management of Post LDLT Anastomotic Biliary Strictures
Mohd Shaker (Egypt)

10:00 - 11:30
Plenary V: Segmental and Live Donor Liver Transplantation
(Each presentation 15 minutes)

Chairpersons: Adel Hosny (Egypt), Mohamed Al-Sebayel (KSA), Henrik Gjertsen (Qatar)

Adult-to-Adult Living Donor Liver Transplantation using Dual Graft
Sung-Gyu Lee (Korea)

Surgical Strategies to Minimize Biliary Complication in Segmental Liver Transplantation
Dieter Broring (KSA)

Prevention and Management of Complications in Technical Variant Pediatric Liver Transplantation
George Mazariogos (USA)

Evaluation of Synthetic Grafts in Reconstruction of Segments V and VIII
Mohamed Shobari (Egypt)

11:30 - 12:30
Friday Prayer – Poster Viewing – Coffee Break

12:30 - 14:00
Plenary VI: Liver Transplantation for Viral Hepatitis
(Each presentation 15 minutes)

Chairpersons: Khaled Selim (USA), Nazeef Al-Dweik (Qatar), Imaad Mujeeb (Qatar)

Epidemiology and Natural History Of HCV in Egyptian Liver Transplant Recipients
Gamal Esmat (Egypt)

Post-Transplant Monitoring of Recurrent HCV Disease
Marina Berenguer (Spain)

Pathology of Recurrent Hepatitis C: Diagnostic Problems and Differential Diagnosis
Stefen Hubscher (UK)

The Effect of Using Hepatitis B Core Positive Grafts on Liver Transplantation
Faisal Aba AlKhail (KSA)

Post-Transplant HBV: Role of HBIG in the Current Era of New Oral Antivirals
Marina Berenguer (Spain)

14:00 - 15:00
Lunch Break

15:00 - 17:00
Plenary VII: Status of Organ Donation in Arab Countries
(Each presentation 15 minutes)

Chairpersons: Paul McMaster (UK), Francis Delmonico (USA), Mustafa Al-Mousawi (Kuwait)

Obstacles of Donation in GCC Countries
Faisal Shaheen (KSA)

Prospective for Deceased Donor Liver Transplantation in Egypt
Mahmoud El-Meteini (Egypt)

Challenges Facing Deceased Organ Donation in Qatar
Riadh Fadhil (Qatar)
Donor Organ Shortage Crisis: A Case Study Review of an Economic-Incentive System
Mohd Al-Sebayel (KSA)

Current Status Of DCD Liver Donation/Transplantation: Progress and Problems
Nigel Heaton (UK)

Liver Transplant Tourism
John Fung (USA)

Round Table discussion

Coffee Break

State-of-the-art Lecture: New Horizons in Liver Transplantation
Chairpersons: Muna Al-Maslamani (Qatar), Dieter Broring (KSA), Mahmoud El-Meteini (Egypt)

New Horizons in Liver Transplantation
Richard Freeman (USA)

Awards for Best Oral and Poster Presentations
Awarding Committee: Andrew Burroughs (UK), Bakr Nour (Qatar), George Mazariegos (USA)

Presented by: Prof. Ismail Helmy, Medical Education, Hamad Medical Corporation, Qatar

Closing Remarks
Ibrahim Mostafa (PALTS President) and Hatem Khalaf (Congress President)

Pan Arab Liver Transplantation Society General Assembly Meeting

Friday, 18 January
**OP-1**  
**Starting the Liver Transplant Program in Qatar**  

**Abstract:**  
Background: Qatar is an Arab country with a growing cosmopolitan population of around 1.7 million; among whom the estimated incidence of Hepatitis C virus is as high as 6.3% and that of Hepatitis B virus of around 4.7%. Till recently, patients suffering from end-stage liver failure had to seek liver transplantation (LT) abroad entailing much agony and suffering integral to their treatment journey. Therefore, a need arose to establish a LT program in Qatar especially that cadaveric organ donation has been already legalized since 1997 with an estimated 50 potential deceased donors per year. The setting up of LT program at Hamad Medical Corporation (HMC) commenced in early 2011 aiming to introduce LT over three phases: (Phase I) Adult Deceased Donor LT, (Phase II) Adult-to-Adult Live Donor LT; and (Phase III) Pediatric LT. Hereby we report our early experience.  
Methods: The first LT in Qatar was performed on 06 December 2011. The patient was a 43-year-old Egyptian who had Hepatitis C-induced end-stage liver disease with a MELD score of 16. The donor was a 48-year-old Filipino who died of cerebral hemorrhage. The recipient underwent standard deceased donor LT with duct-to-duct biliary anastomosis and without veno-venous bypass. The pioneering LT was performed at HMC by a local team of surgeons without outside assistance. Since starting the liver transplant program in Qatar, a total of three (3) deceased donor liver transplant were performed at Hamad Medical Corporation.  
Results: Only three patients were transplanted during the first year. Male/female ratio was 3/0; Median age was 56 (46–63); indications for LT included: hepatitis C cirrhosis, hepatitis B cirrhosis with hepatocellular carcinoma, and cryptogenic liver cirrhosis; median blood transfusion was 6 units (0–10); median ICU stay was 2 days (2–5); median hospital stay was 10 days (9–16). All three recipients survived after a median follow-up period of 264 days (24–360), and are enjoying a healthy life without any serious early or late complications.  
Conclusion: Liver transplantation can be performed successfully and safely at Hamad Medical Corporation without outside assistance. However, severe organ shortage remains the biggest hurdle facing the program and efforts now needs to be directed to improve the number and quality of available deceased donors in Qatar. Until then perhaps living donor LT may be the only way forward to help the patients on the waiting list and to prevent needless deaths.
OP-2
Liver Transplantation in Jordan
Abdalla Bashir
Jordan Hospital, Amman, Jordan

Abstract:
Liver transplantation in Jordan - Started in Jordan in 2004 at two medical centres; King Hussein Medical Centre and Jordan Hospital. There was the need to start Living Donor Liver Transplantation (LDLT) to serve our Jordanian and non-Jordanian patients as Jordan is a main referral medical centre in the MENA region. Patient data, indications and outcome will be presented.

OP-3
Live Donor Liver Transplant in Iraq, a Venturous Mission in the Least Expected Territory but Largely Needed
Assaad Hassoun, MD, FACS, Annie Southall PA, Robert Osorio, MD, FACS, Christ Brown, MD, Zanko Shrenko, MB Ch B, Loth Haddad MB Ch B, Isabelle Tsien PA
CPMC/ PAR Hospital, San Francisco, USA

Abstract:
Background: Live donor liver transplant is only being done in less than half of the countries in the world and it is the only option for many. Because of political and security challenges, Iraq was probably least expected to be one. In addition, it was the first time that a liver transplant medical team was assembled and traveled to Iraq to start such a highly profile procedures.

Body: Three trips over a year from November 2011 through October 2012 were carried out and nine pair of live donor liver transplants was performed. Six were right lobe liver graft based on right and middle hepatic veins, two grafts were left lobes to include left and middle hepatic veins and caudate lobe, and one was aborted because of recipient anatomy.

Challenges: Availability of needed equipments, poor knowledge of the local hospital about the high standards of this procedure, short trips with suboptimal follow up time and left mainly by local team/ internet and phone, medications availability, and unreliability of lab testing.

Outcome: All donors were discharged home within 7-10 days, two of them had bile leak requiring delayed sonographic-guided placement of percutaneous drains, and both of those same donors also developed DVT and currently on Coumadin at home. Seven recipients were discharged home between 10-14 days; five of them had no complications and currently on Gengraft, Cell Cept, and prednisone. One recipient required re exploration for infected biloma and drainage. One recipient who also had dextrocardia and chronic lung disease died after three months from sepsis. One recipient, who was a questionable candidate, died on post op day 3. Yield: As a result, Iraqi medical community acknowledged the need for a dedicated liver transplant center and gained the local governmental support.

Conclusion: Although the mission was started by an overseas assembled team, and faced many challenges, it successfully treated needed liver failure patients and introduced and established liver transplantation program in Iraq.
OP-4
Long-Term Follow-up of Adult and Pediatric Liver Recipients in Algiers

CHU Mustapha, Algiers, Algeria

Abstract:
Introduction: In Algiers, we started a program of living donor liver transplantation (LDLT) in February 2003, a local pediatric transplantation program has not yet begun, but the children are followed in our country. The main objective of this study was to evaluate long-term follow up of transplanted patients in our center and abroad.

Patients and Methods: 39 adults recipients were followed from March 2003 to March 2012, the mean age was 38 years (16-58) they were 23 men and 16 females, 33 underwent LDLT in Algeria and six patients had DD graft abroad : LT (n=3), liver-kidney transplantation (n=2) and LDLT (n = 1). Fifteen (15) pediatrics recipients were followed from February 2007 to August 2012, the mean age was 4.4 years (0.6-14). They all benefited LDLT abroad.

Results: For adults recipients the survival recipient rate at 3 years was 61 % (n =26) for all and 62 % (n= 21) in LDLT group with median follow up of 58 months. In case of LDLT no mortality occurred in donors. 43% of recipients died (n = 13), in perioperative period (n=10) and lately (n=3). The 34 donors are alive without any late complications. 15 % of recipients had biliary complications, 42% had a recurrence of initial disease, and metabolic syndrome was seen in 61 %, infectious complications in two cases, and nasopharyngeal cancer in one. In pediatrics recipients 86% (n = 13) are alive with median follow up of 24 months (2-72), the two recipients died in perioperative period. 33 % (n = 5) had infectious complications, 26% (n =4) developed asthma, one had anastomotic biliary stenosis, one had intestinal obstruction, one developed autoimmune hepatitis de novo and we note occurrence of intestinal lymphoma in one.

Conclusion: In adults despite disease recurrence on histological examination, the survival achieved was encouraging. Pediatric results are satisfactory.

OP-5
Do Livers Always Protect Simultaneously Transplanted Kidneys in Allosensitized Recipients? Do They Even Protect Themselves?

Medhat Askar, Ahmed A Hassan, Jesse Schold, Bijan Eghtesad, Stuart Flechner, Nizar Zein, Titte Srinivas, John Fung
Cleveland Clinic, Cleveland, USA

Abstract:
A positive cross match in orthotopic liver alone (OTL) and combined liver kidney transplants (CLK) is considered acceptable based on assumed immunoprotective effects conferred by the liver allograft. As recent case reports highlight humoral rejection of the kidney in CLK, we studied the impact of a positive cross match and sensitization on CLK and OLT outcomes.

Methods: Using data from the United States SRTR registry pertaining to recipients transplanted between 1995 and 2008 we examined graft (kidney, liver) and patient survival by T-cell cross match (TXM) status.

Results: Of 3298 CLK recipients, 1,878 (57%) had TXM information, 11% had indications of positive TXM. Approximately half of OTL recipients (48%) had TXM results available in the registry data. Among these, 9.5% of recipients had a positive cross match (n=3,031). These proportions were relatively consistent over the study period. In the CLK recipients, univariate analyses -time to kidney (p=0.01) and liver (p<0.001) graft loss and death (p<0.001) were significantly diminished among patients with either positive TXM or PRA >10% at transplantation. In the multivariate Cox Model for time to patient death these effects were independent of donor/recipient age, primary liver diagnosis, MELD score or HLA mismatch including a significant adjusted hazard for all-cause mortality (AHR=1.24, 95% C.I. 1.08-1.43). Further, conditional 1-year patient survival (patients with at least one year of post-transplant survival) was significantly lower among sensitized patients; 78% versus 83% in non-sensitized recipients (p=0.001). In the OTL cohort, Recipients with a positive cross match had significantly lower survival (Figure, p<0.001) including 72% and 67% survival at five years for negative and positive cross match patients respectively. These results were consistent in the multivariable models (AHR=1.22, 95% CI 1.14–1.33 for positive cross match patients relative to negative) independent of other risk factors.

Conclusion: Our data underscore the relevance of a positive cross match and sensitization to kidney graft and overall outcomes in CLK and OLT and challenge the prevailing dogma that the liver allografts are universally immune from humoral allosensitization insult and protect the kidney from alloantibody mediated damage. Prospective studies are critically needed to investigate allosensitization and its impact on outcomes in CLK and OLT.
OP-6
Markers of Operational Immune Tolerance after Pediatric Liver Transplantation in Patients under Immunosuppression
S. Schulz-Juergensen and Martin Burdelski
King Faisal Specialty Hospital – Organ Transplant Centre, Riyadh, Saudi Arabia

Abstract:
A prospective differentiation between patients developing immune tolerance from those required ongoing immunosuppression would be of great clinical advantage. 20–25% of patients after pediatric liver transplantation are believed to have developed this operational immune tolerance allowing them to get rid of lifelong immunosuppression with known side effects such as arterial hypertension, renal insufficiency, cardiovascular disease and infection. In our study, T-Cell sub-populations measured during regular post-transplant visits, using FAC analysis with CD45+CD25+CD127 as a marker for TREGS, given as proportion of cd3+cells.

OP-7
Metabolic Disorders in Liver Transplantation
Magdy Khalil
National Liver Institute, Menoufya University, Egypt

Abstract:
Patients, who undergo orthotopic liver transplantation (OLT), almost by definition, have end-stage liver disease. Many of the underlying endocrine and metabolic alterations are exacerbated by the OLT procedure itself. Serum insulin concentration is elevated at least 2-fold, and glucagon concentration 5-fold, compared with healthy controls. Plasma glucose concentration in end-stage cirrhosis is increased above that of healthy volunteers, and may or may not attain the threshold for diagnosis of diabetes mellitus. The typical presentation of patients with end-stage cirrhosis is hyponatremia, indicating that retention of free water outstrips that of Na+. Most patients with stable end-stage cirrhosis have neutral acid/base balance. They can, however, present with disturbances that include respiratory alkalosis, metabolic alkalosis, or metabolic acidosis. Two operant mechanisms may produce metabolic acidosis: (1) failure of the liver to clear lactate, resulting in lactic acidosis, and (2) inability of the dysfunctional kidney to retain bicarbonate. At anesthesia induction, plasma lactate concentration is usually within normal limits, although it may be higher than that in patients without liver disease about to undergo surgery. Throughout the dissection stage there is a progressive increase in plasma lactic acid concentration. Patients are usually euclidean at anesthesia induction, but can alternatively exhibit either hypokalemia or hyperkalemia. The major late consequence of hypercitratemia is exacerbation of metabolic alkalosis, because each citrate metabolized is accompanied by consumption of 3 H+ equivalents. References Silva G, Navasa M, Bosch J, et al. Hemodynamic effects of glucagon in portal hypertension. Hepatology. 1990;11:668–673. Sterns RH. The treatment of hyponatremia: first, do no harm. Am J Med. 1990;88:557–560. Shangraw RE, Robinson ST. Oxygen metabolism during liver transplantation: the effect of dichloroacetate. Anesth Analg. 1997;85:746–752.
OP-8
LDLT, Jordan Hospital Experience
Saeb Hammoudi, Abdullah Bashir, Anwar Jarad, Muawieh Ababneh
Jordan Hospital, Amman, Jordan

Abstract:
From September 2004 to October 2012, 78 cases of LDLT were performed at Jordan Hospital Amman-Jordan. Indications, classification, complications, morbidity, mortality & outcome will be presented.

OP-9
Clinical Outcome of Qatar Residents Undergoing Liver Transplantation Abroad
Rafie Yakoob, Moutaz Derbala, Muneera Almohannadi, Saad Al Kaabi, Hatem Khalaf, Nazeeh Eldweik, MT Butt, Khalid Ejji, Fuad Pasic, Anil John, Manik Sharma, Hamid Wanni
Hamad Medical Corporation, Doha, Qatar

Abstract:
Objectives: To study the long term outcome after liver transplantation (LT) in Qatar residents who underwent LT outside Qatar
Method: Between October 1988 and October 2012, eighty three (83) Qatar residents underwent LT outside Qatar; their data was collected and analysed.
Results: Out of the 83 recipients, 60 (72%) were transplanted in China, while the remaining 23 (28%) were divided between Egypt, USA, Vienna,and India. Seventy patients (84.3%) underwent deceased donor liver transplant (DDLT), and the remaining 13 patients (15.6%) underwent living related liver transplant (LDLT). Male to female ratio was 49(60%) to 34(40%), median age was 56 years (range 18-75 years). Hepatitis C virus (HCV) cirrhosis was the main indication for LT in 56 patients (67.5%). Out of the 83 recipients, 66 (80%) survived after a median follow up of four years (range 1-23 years). Deaths were due to Sepsis in seven patients, recurrent hepatocellular carcinoma in six patients, recurrent HCV cirrhosis in three patients, Uncontrolled upper gastrointestinal bleeding in one patient.

Conclusion: Qatar residents who underwent liver transplant abroad showed good long-term outcome. Due to high prevalence of HCV, we expect a growing need for liver transplantation in Qatar. Although live liver donation is now widely practiced, we believe that deceased organ donation should be encouraged and aggressively promoted. At the same efforts should be directed to prevent and treat HCV infection in Qatar in order to avoid the drawbacks on the society as well on the country’s economy.
OP-10
De Novo Hepatitis B in Egyptian Patients Undergoing Orthotopic Liver Transplantation in China
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Abstract:
Introduction: De novo hepatitis B virus (HBV) infection after orthotopic liver transplantation (OLT) has been reported with variable incidence, presentation and outcome.

Aim of the study: The aim of this study was to determine the incidence, presentation and outcome of de novo HBV infection in Egyptian patients underwent orthotopic liver transplantation in China.

Patients and methods: From April 2005 to December 2009, 92 Egyptian patients with ESLD had undergone OLT in China then completed their clinical follow up at our center. The etiology of their liver disease was HCV-related liver disease 87 patients (94.5%), cryptogenic 3 (3.2%), autoimmune 1 (1.0%) and alcoholic 1 (1.0%). Six patients (6.5%) developed de novo hepatitis B. They were 5 males (83.3%) and 1 female (16.7%) with age range 19-48 years (mean 38.83). The etiology of their liver disease was HCV in 5 (83.3%) and cryptogenic in 1 (16.7%). HBsAg seropositivity was detected during routine tests (asymptomatic) in 2 (33.3%), acute hepatitis-B in 2 (33.3%), with recurrent hepatitis C in 1 (16.7%) and with moderately severe acute cellular rejection in 1 (16.7%). They were managed by adding Lamivudine only in 3 (50%), Lamivudine and Adefovir in 1 (16.7%), Lamivudine and Pegylated interferon in 1 patient (16.7%) and Entecavir in 1 (16.7%).

Results: One patient developed sustained spontaneous clearance of HCV viremia and HBV viremia despite persistence of HBsAg positivity. Another patient cleared HBV viremia with still HBsAg positivity. Three patients (50%) cleared HBV viremia with seroconversion to HBsAb +ve. One patient died because of biliary and vascular complications with persistent HBV viremia and HBsAg positivity despite treatment.

Conclusion: The high incidence of De novo HBV infection among Egyptian patients underwent OLT in China suggests their infection from liver allograft but it did not significantly affect morbidity or mortality.

OP-11
Recurrence of Hepatitis B after LDLT
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Abstract:
Background: LTX for ESLD due to hepatic B is a standard treatment. Preventing HBV recurrence is still not well standardized. The agent used or duration of individual prophylaxis protocols is still not standardized. We report two cases of HBV recurrence after stopping prophylaxis for five years.

Patients and Methods: We transplanted a total of 17 patients for hepatitis B ESLD. This is the commonest indications for LTx in our center. We use HBIG 800–100 iu IM in the daily in the first week and after that monthly for the first year, with antibody titer >100 all the time. We also used Lamivudine for five years.

Results: During follow up they were all HBsAg negative and HBV DNA negative. After five years of continuous negativity, we stopped lamivudine but within few months HBsAg recurred and in one patient HBV DNA rose to 8600000 copies /ml with abnormal liver enzymes and responded to treatment with Entecavir: Discussion: The best approach to HBV prophylaxis after LTX is not well standardized. Even a long period of Surface antigen negativity did not preclude clinical hepatitis recurrence and this goes well with the known fact that HBV never disappears from body. Other approaches need to be explored and the oral agents need to be continued indefinitely under immunosuppression post LTX.

Conclusion: Though this case report is small but so far oral prophylaxis needs to be continued for good until better recommendations are available.
OP-12
Donor-motivational Aspects in LDLT: From the Donor’s Perspective
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Abstract:
Background: With the introduction of living donation in organ transplantation, donor selection & evaluation have become one of the important steps in the transplantation process. In addition, psychological conflicts, ethical issues, operation risks, as well as, dependencies in the family structure generate considerable pressure on potential donors in LDLT.

Objective: This review is based on our center’s personal experience with almost 200 LDLT and evaluation of the factors that influence the motivation of potential living donors.

Methods: 193 living -liver donors were evaluated preoperatively through a screening questionnaire, followed by formal evaluation. On the basis of a clinical interview, the potential donors were assessed for motivation, ambivalence concerning the relationship between donor & recipient.

Results: The donor mean age was 25.53± 6.39 y with a range of 18-45 y. Males represented 64.7 % of the population. The most common donors were children to their parents 32.1% (son n=43, daughter n=19) while parents to their children were 15% (mother n=21, father n=8). Siblings among each other were 16.5 % (brother n=22, sister n=10). Nephews & nieces giving their uncle or aunt were 14%. The number of wives donating to their spouse was 11 (5.7%) while there were no husbands giving their wives. Among the remaining donors, there were 11 cousins & one uncle. Unrelated donors were 20 (10.4%).

Conclusion: High motivation for living donation is influenced by the donor’s relationship with the potential recipient. This relationship reflects a strong family bond & shows their desire to save the lives of family members & relatives, as a large portion of the donors were from the 1st degree relatives represented by 63.7%.

OP-13
Liver Transection Techniques in Donors for Living Donor Liver Transplantation
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Abstract:
Objectives: Different techniques of liver parenchymal transection have been described; include finger fracture, sharp dissection, clamp–crush methods, Cavitron ultrasonic surgical aspirator (CUSA), the hydrojet and the radiofrequency dissection sealer (RFDS). The aim of this study is to compare clamp crushing technique versus (CUSA) in parenchymal transaction in donor of living donor liver transplantation.

Methods and Materials: During the period July 2004 to November 2012, 76 donors underwent liver resection for living donor liver transplantation. Clamp crushing technique was used in 40 donors, while Cavitron ultrasonic surgical aspirator (CUSA) was used in 36 donors. We compare between the two techniques in post operative morbidity, liver functions, operative time, operative blood loss and hospital stay.

Results: Blood transfusion requirements were lower with the clamp–crush technique than with the CUSA. Clamp–crush technique was quicker than the (CUSA). There was no statistically significant difference between the two groups in mortality and morbidity, peak AST, ALT or bilirubin level, prothrombin activity, ICU or hospital stay.

Conclusion: The old clamp–crush technique is more rapid and is associated with lower rates of blood loss, otherwise similar outcomes when compared with Cavitron ultrasonic surgical aspirator (CUSA). From department of general surgery, liver transplantation unit Royal medical services, Amman-Jordan
OP-14
10-Year Experience of LDLT for HCC: Where Are We Now?
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Abstract:
Background: Because HCC arises in cirrhotic livers and is often multifocal, transplantation for HCC seems to be a rational approach. The restrictive selection criteria (Milan criteria), yielded excellent results but some authors argue that the criteria are too restrictive. The purpose of this study was to assess the outcome of LDLT in patients with HCC. We also attempted to identify risk factors for recurrence, especially in patients with HCC exceeding the Milan criteria, to determine how the current criteria for patient selection can be safely extended in the setting of LDLT.

Methods: A total of 172 patients who underwent LDLT for HCC were included. At the beginning of the series we followed Milan criteria but later we adapted a down staging protocol. Recurrence-free survival rates according to various factors were compared to identify risk factors for recurrence.

Results: Patients with early deaths (n=26) were excluded from the study. Fifty one patients (34.9%) preoperatively exceeded the Milan criteria. The median follow-up was 31.6 months (range: 3-120 months). The overall 1, 3 and 5 years survival rates were: 95, 88 and 85%, respectively. HCC recurred in 19 patients (13%), twelve patients (12.6%) were within the Milan criteria while seven (13.7%) exceeded the criteria. 1,3 and 5 years recurrence free survival were 94, 81.6 and 81.6% respectively. Both microvascular invasion and AFP ≥400 were significant predictor of high recurrence rate while other risk factors were insignificant.

Conclusions: LDLT was shown to offer acceptable results in patients who exceeded the Milan criteria with down staging protocol. The indication for LDLT can therefore be expanded beyond the Milan criteria, especially for patients with low AFP.

OP-15
Increasing the Donor Pool: the Consideration of Pre-hospital Cardiac Arrest in Controlled DCD Donation for Liver Transplantation
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Abstract:
Introduction: Donor warm ischaemia has implications on outcomes following liver transplantation (LT) in organs from donors after cardiac death (DCD). Pre-hospital cardiorespiratory arrest (PHCA) prior to withdrawal and donation may confound the ischaemic insult; hence centres are cautious in using these livers. The literature on outcomes of LT using such grafts is sparse. Our aim is to compare outcomes of grafts from DCDs who sustained PHCA prior to donation with those who did not have.

Methods: A review of prospectively held data of all DCD grafts transplanted between 2007–2011 was undertaken to identify donors who sustained PHCA. The Unit policy was to consider such donors when transaminases were less than four times the normal range with an improving trend.

Results: In the study period a total of 108 DCD transplants were performed with 26 donors sustaining PHCA. Donors who suffered PHCA had a median “downtime” of 20 minutes (1–50) and a median ITU stay of two days (1–14) prior to organ procurement. A comparative analysis between donors in both cohorts showed no difference in age, gender, ITU stay and blood results pre-donation (AST, ALP, GGT, sodium and bilirubin). Apart from ALT, which was found to be significantly higher among PHCA donors (p=0.001), the rest of pre-donation blood tests were not significantly different. The transplant outcomes from the 26 donors who had sustained PHCA were compared against 82 non-PHCA DCD grafts. With a median follow-up of 18 months (1–59), there was no significant difference in both graft and patient survival between the PHCA and non-PHCA cohort (p=0.44, p=0.63).

Conclusion: DCD donors with PHCA may increase the donor pool. Careful donor selection of a PHCA DCD, assessing the trend of serum transaminases and excluding donors with multiple risk factors for donation has produced outcomes comparable to the non-PHCA. Our findings show that PHCA DCDs should not be excluded from liver donation and if adequately selected, they can provide additional liver grafts with satisfactory early and late outcomes.
Cardiovascular Risk Assessment of the Liver Transplant Candidate

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Abstract:
Cardiovascular Risk Assessment of the Liver Transplant Candidate Dr. M O Ababneh, FRCA Dr. R Shehab, JBA Liver transplantation (LT) candidates today is increasingly older, have greater medical problems, and have more cardiovascular comorbidities than ever before. Steadily rising end-stage liver disease (MELD) scores at the time of transplant, resulting from high organ demand, reflect the escalating risk profiles of LT candidates. In addition to advanced age and the presence of comorbidities, there are specific cardiovascular responses in cirrhosis that can be detrimental to the LT candidate. Patients with cirrhosis requiring LT usually demonstrate increased cardiac output and a compromised ventricular response to stress, a condition termed cirrhotic cardiomyopathy. These cardiac disturbances are likely mediated by decreased beta-agonist transduction, increased circulating inflammatory mediators with cardiodepressant properties, and repolarization changes. Low systemic vascular resistance and bradycardia are also commonly seen in cirrhosis and can be aggravated by beta-blocker use. These physiologic changes all contribute to the potential for cardiovascular complications, particularly with the altered hemodynamic stresses that LT patients face in the immediate post-operative period. Post-transplant reperfusion may result in cardiac death due to a multitude of causes, including arrhythmia, acute heart failure, and myocardial infarction. Recognizing the hemodynamic challenges encountered by LT patients in the perioperative period and how these responses can be exacerbated by underlying cardiac pathology is critical in developing recommendations for the pre-operative risk assessment and management of these patients.

Cystatin C Vs Creatinine related e-GFR as Predictor of Death on the Pre- liver Transplantation Population

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Abstract:
Introduction: Serum creatinine is a component of the MELD (The Model for End-Stage Liver Disease) score but is influenced by gender, age, race, and laboratory technical interference. Cystatin C has been proposed as better surrogate marker for kidney function in patients with liver cirrhosis.

Aim: Our aim was to compare both serum creatinine and Cystatin C related e-GFR (estimated Glomelular Filtration Rate) as predictors of mortality in patients waiting liver transplantation.

Methods: This is a single center study of 96 consecutive adults listable for liver transplantation as all had ESLD with modified Child Pough score ≥ 10 (Only 20 patients with clinical indication for transplantation had MELD lower than 13 due marked low creatinine). Creatinine related e-GFR (cr e-GFR) was calculated using the MDRD 4 equation (Modification of Diet in Renal Disease 4 equation): e-GFR = 186 x creatinine (mg/dl)-1.154 x age-0.203 x 1.212(if black) x 0.742(if female) Cystatin C related e-GFR (Cy e-GFR) was calculated using Larsson formula: 77.239 x cystatin C (mg/L)-1.2623 Renal dysfunction was labeled when e-GFR < 90 mL/min/1.73m2. Pearson correlation, Logistic regression was used to assess the association of variables with 3-month waiting list mortality. Concordance correlation was used to check the agreement between the 2 methods of e-GFR.

Results: Mean age was 47.58±13.56 years (male: female 61:35). The main indications for liver transplantation were HCV (28.2%), HBV (25%), and cryptogenic liver cirrhosis (23.96%). The median listing MELD score was 18 (range 9–40). 23 (23.96%) died, and 19 (19.79%) were transplanted within three months. According to Cy e-GFR 77 (80.2%) had renal impairment vs. 47 (48.96%) when cr e-GFR was used. The median listing cr e-GFR was 83.93 (interquartile range 81) mL/min/1.73m2, the median listing Cy e-GFR was 58 (interquartile range 133) mL/min/1.73m2. On Pearson correlation both Cy and Cr e-GFR had highly significant correlation with death within 3 months but on bivariate logistic regression analysis only Cy e-GFR was an independent predictor mortality (p=0.039 Vs. 0.139).

Conclusions: Renal impairment is more frequently diagnosed at moment of listing for liver transplantation by Cy e-GFR than Cr e-GFR. Although renal impairment is correlated with 3-month mortality in liver transplantation waiting list Cr e-GFR and not Cy e-GFR is the predictor of mortality.
**OP-18**

**Liver Biopsy as Rejection Criteria in Living Donor Liver Transplant: Analysis of 94 cases**

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**Abstract:**

Background: The application of liver biopsy as one of the selection criteria in living donor liver transplantation (LDLT) is controversial. In populations with high prevalence of liver disease and obesity, it seems logical to include liver biopsy as one of the donor selection criteria. The aim is to maximize the benefit to the recipient and minimize risk to the donor.

Aim: The aim is evaluate the rule of liver biopsy as rejection criteria for LDLT and to ascertain the safety of the procedure to the donor.

Methods: From March 2002 to May 2012, a total of 233 deceased donor living transplants and 188 LDLT were performed at our institution. The number of potential donor worked up was 736. Potential living donors were worked up according to a step-wise evaluation protocol. Those with BMI > 28 were excluded. The age of the worked up donors ranged from 18 to 50 years (mean = 28).

Results: A total of 548 (74%) donors were rejected. Most were rejected at the initial stages of evaluation. In 82 donors (11%) the rejection was for complicated biliary anatomy. Other anatomical reason includes insufficient liver volume in 132 (18%) and complicated vessel anatomy in 15 (2%). Liver biopsy excluded 94 donors (13%). Significant macrovesicular steatosis (fat more than 10%) was detected in 56 donors (60%) and was the main reason for rejection. Other causes include significant fibrotic changes in 15 (16%), significant portal lymphocytic infiltrate in 13 (14%), active hepatitis 3 (3%), schistosomiasis in 3 (3%) and other rare disorders in another 4 (4%). There was no major complication from the procedure.

Conclusion: In our experience liver histology excluded 13% of the potential living donors. This percentage is significant and in our opinion justifies the procedure when the safety of the procedure to the donor.

**OP-19**

**Perioperative Factors and Conditions Affecting Intraoperative Sodium Homeostasis**

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**Abstract:**

Introduction: Intraoperative changes in serum sodium (Na) can affect outcomes following liver transplantation (LT). We investigated perioperative factors that may influence Na homeostasis intra-operatively.

Methods: Following IRB approval we conducted a retrospective study of all consecutive patients undergoing LT during a 3.5 year period. Combined liver/kidney, fulminant hepatic failure and re-transplantation cases were excluded. Postoperative PACU admission was standard. Data collection included demographics, delta sodium (∆Na), defined as post– minus pre-operative serum Na (Napost – Napre); operating room (OR) time, underlying liver pathology, preoperative and intraoperative administration of diuretics, h/o hepatic encephalopathy (HE), administration of colloids, and volume of intraoperative crystalloids. Spearman correlation, two sample t-test and one way analysis of variance (ANOVA). Results are in means ± SD, p < 0.05 is statistically significant.

Results: Data of 165 patients (92 live donor, 73 deceased donor LT recipients, 76.4 % men) were analyzed. The mean Napre and Napost was 135.7 ± 4.5 mEq/L (range of 125-147) and 141 ± 3.5 mEq/L (range of 132-151), ∆Na of 5.3 ± 4.5 mEq/L and change of 0.8 mEq/L per 1 h of OR time. Patients with preoperative hyponatremia (Napre < 130 mEq/L, N = 17/165) had significantly greater ∆Na (by 6.4 ± 4.1 mEq/L) than patients with Napre ≥ 130 (p < 0.0001). Patient receiving preoperative diuretics (N = 102) had significantly lower Napre than patients on no preoperative diuretics (N = 63, 134.6 ± 4.5 vs. 137.9 ± 3.9 p < 0.0001). ∆Na was also significantly greater in patients on preoperative diuretics, 5.9 ± 5.0 (101) compared to no preoperative diuretics, 4.0 ± 4.0 (63), p = 0.0097. ∆Na did not differ in patients treated vs. not treated with diuretics intraoperatively. Patients with HE (N = 93) had greater ∆Na 5.9 ± 3 than patients with no HE (N = 70) 4.3 ± 3.7, 0.0328. There was no association of ∆Na based on liver pathology and volume of intraoperative colloids, however patients treated with colloids (N = 25) had less ∆Na 3.4 +/- 4.0 than when no colloids (N = 139) were given 5.7 +/- 4.5 (p = 0.0181).

Discussion: During liver transplantation serum sodium increases by an average 0.8 mEq/L/h of OR time. The rate of rise was increased to 1.7 mEq/L/h compared to baseline in hyponatremic patients. Preoperative diuretics, HE, and avoidance of intraoperative colloids were associated with greater sodium change, while total intraoperative volume of crystalloids and use of diuretics did not affect delta sodium. A prospective validation of these findings and correlation with outcomes is warranted.
OP-20
Congenital Absence of Portal Vein and Role of Liver Transplantation; a Case Report and Review of Literature
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Abstract:
Background: Congenital Absence of Portal Vein (CAPV) is a rare congenital malformation of the splanchic veins where venous drainage bypasses the liver and drains into the systemic veins through a congenital shunt. CAPV can lead to a wide range of complications including systemic, pulmonary as well as hepatic complications, the most serious of which is hepatocellular carcinoma. Treatment depends on the main presentation with liver transplantation being considered in case of failed medical treatment or development of liver tumors.

Case Description: A 21 years old male with CAPV developed multiple focal nodular hyperplasia lesions which were complicated by rupture of one nodule requiring surgical resection. He successfully underwent Orthotopic Liver Transplantation with an uneventful postoperative course and no reported complications for 18 months of follow up.

Conclusion: Liver transplantation is a potentially curative treatment option in selected patients with complicated CAPV.

OP-21
Infection Complications and Pattern of Bacterial Resistance in Living Donor Liver Transplantation: A Multicenter Epidemiological Study in Egypt
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Abstract:
Background: Infection post liver transplant is the one of the most devastating complications with attributable mortality up to 50%. Several risk factors increase the risk of infection post liver transplant including complexity of the operation, poor general condition of the patients and the use of immunosuppressant drugs. Because the data that addressed the prevalence and pattern of infection post living donor liver transplantation (LDLT is scarce in Egypt, we conducted this study to quantify the incidence, risk factors, and outcome of patients associated with infection post-LDLT in 3 hospitals in Egypt.

Methods: We retrospectively, analyzed the medical records of 311 patients who underwent LDLT from January 2006 to April 2011 at three transplant centers in Egypt. Risk factors independently associated with infectious complications and mortality identified by univariate analysis. All variables significant in univariate analysis were analyzed by a multiple regression logistic model.

Results 147 (47%) of patients developed infectious complication after liver transplant with 416 episodes of infection that were documented within 3 months after transplantation. Biliary tract was the most common site of infection; 169 (40.6%) followed by abdominal infection 129 (31%), then pneumonia 44 (10.6%), blood stream infection 39 (9.6%), and lastly UTI 30 (7%). The rate of gram negative infection was higher than the gram positive infection [310 (74%) vs 87 (21%)]. Risk of infection was also more frequent with in patients with biliary complications and in patients with postoperative renal dysfunction. However, multivariate analysis revealed that only biliary complications had the higher risk of bacterial infection OR 9.8 p=0.04. The overall mortality was 21% (65/311), and the mortality rate was 52.3% (34/65) for patients with infection.

Conclusion: Early bacterial infections are frequent after living donor liver transplantation and are mostly caused by gram-negative bacilli. Surgery-related complications, especially biliary tract complications were risk factor for Infection. This may warrant reevaluation of the current recommendations about the timing of endoscopic retrograde cholangiography.
OP-22
Effect of Discordance between Pre-Operative Evaluation and Explant Histology on Outcome of Living Donor Liver Transplantation (LDLT) for Hepatocellular Carcinoma (HCC)
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Abstract:
Introduction: Despite meticulous pre-operative evaluation, some discordance is observed on pathological examination of the explant in the size and number of HCC lesions, and in the presence of vascular invasion or lymphatic spread. The effect of this discordance on outcome is not clear.

Aim: to evaluate pre-transplant tumor characteristics and pathological features of the explants and how any discordance impacts survival and recurrence of HCC in patients undergoing LDLT.

Methods: Outcome of LDLT for HCC was assessed in 23 cases, and correlated to explant findings and their discordance with pre-operative data.

Results: All patients were within Milan criteria with no vascular invasion or lymph node spread detected by preoperative imaging. Examination of the explants revealed discordant results in 14 patients. Macroscopic examination revealed six (26%) patients outside Milan. By histopathology, 10 patients (43.5%) exceeded Milan (7 of them (30.4%) exceeded UCSF criteria), and four cases had vascular invasion (2 micro- and 2 macro-vascular invasion). All cases had either well or moderately differentiated HCC. The 1, 3, and 4-year survival was 73.9%, 73.9% and 69.5% overall. The 4-year survival rate for patients within Milan criteria was 85.7%. For patients within UCSF, the 4-year survival was 66.6%. Patients beyond UCSF had 1 year and 4 year survival rates of 57.1% and 42.8% respectively. Three patients (13%) experienced HCC recurrence at three years following LDLT; all were exceeding UCSF. Recurrence was associated with high AFP level, largest nodule diameter >4.5 cm, macro-vascular invasion and regional lymph node metastasis detected by histopathology.

Conclusion: Prognostic criteria related to tumor biology should be considered for proper selection of HCC patients undergoing LDLT and not only tumor morphology. Exceeding Milan and UCSF histologically, vascular or lymphatic spread and high AFP levels were indicators of poor outcome in this series.

OP-23
Primary Liver Malignancy in Children: Outcome with Liver Transplantation
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Abstract:
Background: Hepatoblastoma (HBL) and Hepatocellular carcinoma (HCC) are the most common liver malignancies in children. Different medical and surgical strategies are available for treatment. The option of liver transplantation in properly selected cases is considered one of the best curative options. The purpose of this paper is to describe a single center experience with liver transplantation for children with primary liver malignancies.

Method: A retrospective review of pediatric liver transplants performed in our center between 09/2002 and 11/2012. Cases with the pre or post transplant diagnosis of liver malignancy were reviewed. All clinical, biochemical, radiological and pathological data were collected.

Results: Six cases with primary liver malignancies were identified. They were one male and five females, ages from 10–60 months (Median= 13.5 mon.) with the weight range of 5.6–16 Kg (Median= 8.3 Kg). Three cases were HCC and three cases were HBL.

All three HCC cases were cirrhotic with Progressive Familial Intrahepatic Cholestasis (PELD scores 11, 26 and 40). Two were beyond Milan criteria. Two received deceased donor full grafts and one had a live donor liver graft. All three HBL cases were initially deemed unresectable (PRETEXT classification II, IV and IV) and remained unresectable after chemotherapy. All had live donor liver transplants with IVC replacement with vein allografts followed by adjuvant chemotherapy. All six cases are alive with normal graft function and no evidence of disease recurrence after 18–75 months follow up (Mean= 46.33).

Conclusion: Liver transplantation can offer excellent results in children with unresectable HCC and HBL. These patients should be referred early for transplant assessment as part of their management.
Biliary and Vascular Complications Following Liver Transplantation from Donors after Cardiac Death

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Abstract:
Background: Donor organ shortage continues to be a major challenge in liver transplantation (LT). Recent experience with controlled non-heart-beating donors also known as donation after cardiac death (DCD) is encouraging. However, major complications especially including ischemic cholangiopathy (IC) still a management challenge. We report our experience in managing such complications in recipients of DCD-LT.

Materials and Methods: From July 2006 to January 2010, 29 DCD liver transplants were performed in our center. A retrospective review of the medical records of these patients was performed. The mean follow up was 611 days. Complications searched for included hepatic artery, hepatic veins, and portal vein thrombosis in addition to IC. All patients had Doppler ultrasoundography at day one and Magnetic resonance cholangiopgraphy at three months post operatively.

Results: The mean recipient age was 53.5±9.3 years and the mean donor age was 44.1±13.0 years. The mean patient survival was 579.6 days while the mean graft survival was 534.0 days. The mean warm and cold ischemia times were 36.0±27 minutes and 5.4±1.3 hours respectively. There were no deaths related to these complications and none of the donor or recipient demographics including BMI and etiology of disease correlated with their development. No hepatic artery or portal vein thrombosis was reported. One patient (3.4%) developed partial portal vein thrombosis at day one post operatively and was managed successfully with anticoagulation only. Eight patients (27.6%) developed IC. In these patients, there was a mean of 81 days from LT to the first ERCP. Of the two patients with diffuse IC, one was successfully retransplanted while the other was managed with multiple ERCP procedures and ursodeoxycholic acid. The six patients with hilar or extra-hepatic strictures were successfully managed with endoscopic biliary stenting with an average of 3.5 procedures per patient during the follow up period. Three of the six patients are currently stent free with normal graft function.

Conclusion: DCD donor livers are a valuable resource to bridge the current organ shortage. DCD-LT recipients do not seem to be an increased risk of vascular complications but have increased incidence of ischaemic biliary complications. Early diagnosis and aggressive treatment by endoscopic means of these complications is usually successful especially in non-diffuse IC.

Hepatic Venous Outflow Obstruction in Living Donor Liver Transplantation

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Abstract:
Introduction: Vascular complications after living donor liver transplantation (LDLT) might result in significant postoperative complications. The aim of this study is to determine the factors associated with the occurrence of hepatic venous outflow obstruction (HVVO) and to analyze management modalities.

Materials and Methods: Clinical data of 244 patients who underwent LDLT from October 2001 to October 2011 at Baskent University Hospital were identified.

Results: Eleven of 244 transplants were identified to have HVVO of whom five were males and six were females. The hepatic vein (HV) was anastomosed to the inferior vena cava in three patients, and HV to HV confluence in eight patients. Ascites was the most common post operative manifestation of HVVO. Evidence of HVVO were revealed in seven patients in the early period (within the first 30 postoperative days), and in four patients at late period (after postoperative day 30). We performed balloon dilatation in all 11 patients, and five patients had balloon dilatation more than once. A stent was inserted after balloon dilatation in four patients. Embolism of pulmonary artery was seen in one patient as a complication resulting from insertion of the stent.

Conclusion: Although Doppler USG was useful in identifying the venous outflow obstruction, the exact site of obstruction was determined with venography which was also used in therapeutic dilatation. Technical steps to avoid HVVO include keeping the HV to caval anastomosis short and wide with triangulation, and to avoid graft rotation at the hepato caval junction.
OP-26  
**Endovascular Management of Early Hepatic Artery Thrombosis after LDLT**  
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**Abstract:**  
Purpose: To study the feasibility of endovascular management of early hepatic artery thrombosis after living-donor liver transplantation and to clarify its role as a less invasive alternative to open surgery.  

Materials and Methods: A retrospective review of 360 recipients who underwent LDLT in Cairo University Hospitals and Dar Al-Foad Hospital between August 2001 and April 2012. Early HAT developed in 13 cases (3.6%). Diagnosis was done by Doppler US, CT angiography and digital subtraction angiography. Intra-arterial thrombolysis (IAT) was performed using streptokinase or tPA. In case of underlying stricture, PTA was attempted. If the artery did not recanalize, continuous infusion was done and monitored by Doppler US.  

Results: Initial surgical revascularization was successful in 2/13 cases. IAT was attempted in 11/13 cases. The initial success rate was 81.8 % (9/11), the failure rate was 18.2 % (2/11). Rebound thrombosis developed in 33.3 % (3/9). Haemorrhage developed after IAT in 18.2 % (2/11). Definite endovascular treatment of HAT was achieved in 54.5% (6/11) and definite treatment (surgical, endovascular or combined) in 69% (9/13). (Follow up 4m-4y).  

Conclusion: Endovascular management of early HAT after LDLT is a feasible and reliable alternative to open surgery. It plays a role as a less invasive approach with definite endovascular treatment rate of 54.5%.

OP-27  
**Percutaneous Management of Post LDLT Anastomotic Biliary Strictures**  
Mohamed Shaker, Ibrahim Mostafa, Ahmed Eldorry, and Mahmoud Elmeteini  
Ain Shams University, Cairo, Egypt  

**Abstract:**  
Objective: The purpose of this study is to evaluate the therapeutic response of percutaneous dilatation and stenting of post LDLT anastomotic biliary strictures in adult recipients.  

Patients & Methods: From April 2007 to June 2011, 39 adult recipients were referred with post LDLT obstructive jaundice for the possibility of percutaneous interventional management. They were 25 males and 14 females ranging in age between 46 and 55 years old. The interval between the transplantation and biliary obstruction ranged between 2 weeks and 18 months. In 12 cases, patients were referred after failure of ERCP to bypass the biliary stricture and in 27 cases percutaneous management was performed as a primary method of treatment. All patients were subjected to percutaneous dilatation with insertion of plastic stent in a single session.  

Results: All procedures were technically successful without complications. Clinical success was achieved in 37 out of 39 cases (94.8 %) with reduction of serum bilirubin and liver enzymes to baseline levels. In two cases serum bilirubin did not decrease significantly due to stent occlusion shortly after insertion and stents were replaced endoscopically.  

Conclusion: Percutaneous dilatation and stenting of post LDLT biliary strictures is a feasible, minimally invasive, safe, and highly effective treatment method. Further studies are needed to compare percutaneous dilatation and stenting with endoscopic management.
OP-28
Evaluation of Synthetic Grafts in Reconstruction of Segments V and VIII
Mohamed El Shobairi, Mohamed Abdel Wahab, Tarek Salah
Gastroenterology Surgical Center, Mansoura, Egypt

Abstract:
Introduction: Venous outflow reconstruction of segment V and VIII venous branches using synthetic vascular grafts is a controversial issue.

Methods: Between 2004 to 2012, 192 cases of living donor liver transplant were done in GEC Mansoura. Synthetic grafts were used in 57 cases in the first 157 cases, Age 49.5 ± 7.7. Post HCV cirrhosis 25, HCC 22 and other indication in 3 cases. Synthetic graft to V alone in 29 cases, VIII alone in 12 cases and combined V and VIII in 12 cases. Synthetic vascular grafts are used in the back table to segment V or VIII veins or both, then to either MHV stump or IVC of recipient after revascularization. Patency is judged by intraoperative and postoperative Doppler and function of the graft. Ct is done only if there is doubt.

Results: Post operative Doppler showed edema in segment V or VIII or both in 17% of single RT hepatic vein anastomosis, progress to graft infarction in two cases. Intraoperative thrombosis of synthetic graft was documented by Doppler in 11 cases and redo with wash of thrombus was successful in nine cases. Excellent flow was found in 42 cases. Bad flow and no flow were seen in two cases and with bleeding and closure of graft were done. Salvage grafts were inserted in three cases (V in 2 and VIII in one) as intraoperative dopler show segment congestion with wide vein inside the Liver (ligated during donor hepatectomy). Warm ischemia time was 45.4 min ± 18.5 min (no difference to single anastomosis). Postoperative dopler shew obstructed flow in six. Others patent up to two years.

Conclusion: Synthetic grafts are good alternative to native grafts with good patency and avoid long warm ischemia time. It is safe and can be done on backtable for any number of veins.

OP-29
Microsurgery Technique for Hepatic Artery Reconstruction in Over 300 LDLT
Kareem Sallam, Mohamed Mostafa, Omar Abdelaziz, Hussein Attia, Ayman Amin
Dar Al Fouad Hospital, Cairo, Egypt

Abstract:
Objectives: By the end of the talk the participant should be able to discuss the merits and complications of microsurgery technique in LDLT and options for salvaging a viable and functioning graft. Hepatic artery reconstruction can be done using variety of techniques.

Methods: This talk presents the technical tips and complications of the technique adopted in Dar Al Fouad Hospital, along with monitoring and salvage options for early thrombosis. The microsurgery technique is used which entails using interrupted 8/0 stitches, microsurgery instruments and the operating surgical microscope performed by a dedicated microvascular surgery team. Technical tips for using the technique are presented.

Results: Short term complications (occurring in the first two weeks) were 10 occlusions (3.4%). Revascularization was attempted in all of the patients by either endovascular intervention (4/10) or open surgical exploration (2/10) or both (4/10). Revascularization was successful in 7/10 patients and failed in 3/10. In the seven who have had successful revascularization the underlying cause was thought to be inflow problem in one patient and remained not clearly explained in the others. Only one of these groups had sustained eventual graft failure. In the three in which revascularization failed, the underlying cause was attributed to graft rejection in one patient (diagnosed by intraoperative biopsy). Graft failure occurred in one out of these four patients.

Conclusions: Microsurgery technique reduces complications in general, and is almost a must for some cases in LDLT. In order to harvest such merits dedicated structured training with attention to minute details is required. Back up by close monitoring reliable tool and interventional radiology team can remarkably reduce the graft failure rate secondary to hepatic artery problems.
OP-30

The Effect of Using Hepatitis B Core Positive Grafts on Liver Transplantation

King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia

Abstract:
Introduction: The risk of Hepatitis B (HBV) De Novo recurrence following the use of HBV core antibody positive (HBcAb) donors’ livers’ is well-established, however the reported magnitude of the risk is variable. The development of effective therapy for HBV has encouraged more liberal use of HBcAb grafts especially in endemic areas. We report our experience with HBcAb grafts in terms of rate of De Novo recurrence, preventive strategy, therapy and eventual outcome.

Method: Between April 2001 and January 2012, a total of 378 liver transplants were performed at our center, of which 224 were cadaveric. 48 (21%) were anti HB core positive grafts. 11 of those grafts were given to HBV positive recipients. Two recipients died in the perioperative period. The remaining 35 recipients were hepatitis B surface antigen negative. All patients received prophylaxis with nucleot(s)ide analogue. Recurrence was defined as re-emergence of HBV DNA or HBsAg while on treatment.

Results: The median age of the recipients was 55 (range: 15 – 66). With a median follow up of 4.2 years (range: 0.6 – 9 years). None of the recipients had a detectable viral load prior to transplantation. The table below summarizes the rate of recurrence in relation to the serology of the 35 recipients with negative HBsAg. All recurrence occurred in patients with negative Anti HB core and Anti HB surface antibodies (4/21, 19%). The overall Hepatitis B recurrence in the whole series was (4/46, 9%). Those who developed Hepatitis recurrence were managed with more potent nucleot(s)ide antiviral treatment with very good response.

<table>
<thead>
<tr>
<th>Recipients Serology</th>
<th>Number</th>
<th>Recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti HBc +, HBsAb +</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Anti HBc +, HBsAb -</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Anti HBc -, HBsAb +</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Anti HBc -, HBsAb -</td>
<td>21</td>
<td>4 (19%)</td>
</tr>
</tbody>
</table>

Table 1. Recurrence in different subgroups.

Conclusion: HBV recurrence following the use of Anti HB core grafts was low and occurred most commonly in HB core negative patients with negative surface antibody. The use of anti HB core positive grafts had no negative impact on the long term of liver transplant outcome.
PP-31
Split Liver Transplantation: Single Center Experience at King Faisal Specialist Hospital & Research Centre
Yasser M El Sheikh, Hamad Al Bahili, Martin Burdelski, Mohammed Al Sebayel, Dieter Broering
King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia

Abstract:
Background and Objectives: Orthotopic liver transplantation (OLT) has become a well-established therapeutic modality for patients with End Stage Liver disease. The need for liver transplants currently far eclipses the supply of available donor organs. According to 2005 statistics from the United Network for Organ Sharing (UNOS), the waiting list for a liver transplant now exceeds 17,000 patients. As a result, many patients continue to die while awaiting a life-saving liver transplant. In order to maximize donor organ utilization in children and adults, procedures have evolved such as reduced-size liver transplantation, adult to pediatric living related transplantation, adult to adult living related transplantation, and cadaveric split liver transplantation (SLT). In this study we aim to outline the outcome of our early experience for both (ex situ & in situ) cadaveric split liver transplantation (SLT).

Patients and methods: We report the first Ex-situ cadaveric split liver transplant in the Middle East. Two patients underwent cadaveric split liver transplantation. A 33 years old female patient received segments 4/5/6/7/8 and 23 months old girl child received segments 2/3. We describe the aetiology of their liver disease, MELD/PELD score at transplant, outcome of transplant regarding ICU stay and overall hospital stay. Complications, re-transplants, graft survival, patient survival.

Results: A 33 years old female patient, suffering from ESLD secondary to HBV & HCC (2 lesions 3 x 2.5 x 1 cm right lobe & 1 cm lesion in left lobe) received segments 4/5/6/7/8. And 23 months old girl child with biliary atresia post failed Kasi, received segments 2/3. For the adult patient; ICU stay was 9 days, re exploration for internal bleeding on 3rd post-operative day revealed omental bleeding which was controlled, total hospital stay was 13 days. As for the pediatric patient; PICU stay was 6 days, total hospital stay 29 days. No major events were encountered during their hospital stay and after discharge.

Conclusion: Cadaveric split liver transplantation (SLT) can be performed in non-urgent recipients with excellent results. Therefore, we suggest that cadaveric split liver transplantation (SLT) be applied to expand the donor organ pool and transplant a larger number of patients including pediatric age group.
PP-32
Liver Donation and Transplantation in Saudi Arabia 2004–2010
Faisal Shaheen, Besher Al-Attar, Z. M. Ibrahim, E.A. Gadalla, M. V. Abeleda
Saudi Center for Organ Transplantation, Riyadh, Saudi Arabia

Abstract:
Objective: The aim of the study is to evaluate and analyze the result of the liver donation and transplantation.

Methods: A retrospective study was done during the year 2004 to 2010 from the 616 living donors (LD) and deceased donors (DD). Data includes donor’s characteristics and acceptance rate for DD offered livers, recipient’s status post-transplant follow up period and patient survival.

Results: A total of 612 cases from DD were consented for liver donation and 402 (65.7%) cases were retrieved with 331 (82.34%) from them were able to transplant with donor mean age of 33.2 years. As to LR donors, mostly were son, mother and father related with a mean age of 26.6 years with male/female ratio of 3/1 for a total of 285 transplants. The mean follow up period was 745 days and the mean stay in hospital post transplant was 28.2 days with 11 cases having a primary non-functioning graft. At the end of the follow up period, there were 532 (88%) active patients and 58 (10%) died. 491 (80%) of the active patients are doing well at home and only 41 (7%) at the hospital. The patient survival at three and five years was 87.2% and 77.1% respectively.

Summary: The outcome of the liver transplantation at the Kingdom is comparable to international levels, though the need to increase the acceptance rate and the use of procured liver requires more effort in the management of deceased donors. Both LR and DD transplant should be enhanced to meet the ever-increasing demand of organ transplantation.

PP-33
Liver Transplantation in Presence of A Misplaced Transjugular Intrahepatic PortoSystemic Shunt: A Case Report and Review of Literature
Samy Kashkoush, Mohammed Hamshow, Bassem Hegab, Khaled Abdullah
King Fahd National Guard Hospital, Riyadh, Saudi Arabia

Abstract:
Background: Transjugular Intrahepatic Porto Systemic Shunt (TIPSS) is a useful management tool for patients with severe portal hypertension complicated by variceal bleeding (especially fundal varices), intractable ascites or recurrent hepatic hydrothorax. Misplaced or migrated TIPSS, however, may not only increase technical difficulties, operative time and transfusion requirements during liver transplantation, but can also lead to potentially fatal intraoperative complications. The ideal approach to those situations remains to be defined though different techniques have been reported.

Methods: We describe our operative management of a liver transplant recipient with 2 misplaced TIPS shunts extending from the Spleno-Portal junction to the Supra hepatic Inferior Vena Cava (SIVC). Whereas the Portal Vein could be clamped below the lower TIPSS, it was impossible to achieve vascular control above the upper TIPSS without entering the chest. Alternatively, while applying downward traction on the mobilized liver, we stapled and divided the hepatic veins together with the misplaced TIPSS as high as possible without compromising the SIVC lumen. The TIPSS remnant could be easily removed by pulling individual wires from the stapled vein end. Venous reconstruction was then accomplished using side to side Cavo-Cavostomy. The patient had an uneventful recovery and was followed for one year post-transplantation with no reported complications.

Conclusion: Misplaced or migrated TIPSS can seriously complicate subsequent liver transplantation and careful planning of the surgical approach is essential for a successful transplant operation. Side to side Cavo-Cavostomy allows a better chance to tackle the SIVC misplaced TIPSS without compromising venous reconstruction.
PP-34
Osman Sheha, Shobari M, Salah T, Sultan A, Sadany M, Yassin A, Saraf W, Morshedly M, Fathy O, Abdel Wahab M
Gastroenterology Surgical Center, Mansoura, Egypt

Abstract:
Objective: To evaluate relevant arterial, hepatic, and portal venous anatomy using Multi-detector computed tomography (CT) angiography in potential living liver donors at a single liver transplantation center in Egypt.

Methods: 428 consecutive liver donors underwent CT angiography in the arterial, portal, hepatic venous phases with a 16-row CT scanner. All source and reconstructed images were evaluated for hepatic vasculature anatomy by the team of transplantation including radiologist, surgeons, hepatologist and anesthesia members. The anatomic variants of arterial system, portal venous system, and hepatic veins were characterized according to the classification system of Michels, Akgul, and Nakamura respectively. In most donors for right hepatic lobectomy, CT findings were compared with the results of surgery.

Results: Of 428 candidates, the arterial anatomy shows, 292 had type I (68.2%), 20 type II (4.6%), 68 type III (15.88%), 8 type IV (1.86%), 16 type V (3.7%), 4 type VI (0.93%), 16 type VIII (3.7%), and 4 type IX (0.93%). According to the classification of the portal venous system created by Akgul, type A was seen in 364 subjects (85.05%), 16 Type B (3.73%), 44 type C (10.28%), and 4 type E (0.93%). According to the classification of the right hepatic drainage pattern by Nakamura, type 1 drainage was seen in 236 subjects (55.14 %), type 2 in 112 candidates (26.17%), and type 3 in 80 subjects (18.69%). CT angiography findings were confirmed in all donors who underwent operations.

Conclusions: Multidetector CT angiography can successfully show the relevant hepatic vascular anatomy in potential liver donors.

PP-35
661 Case of LDLT (Single Team Experience)
M Elmeteini, Amr Abdelaal, M Fathy, M Bahaa, H Dabous
Ain Shams University, Cairo, Egypt

Abstract:
661 LDLT has been done since 2001. 611 adults and 50 pediatrics. 194(32%) were transplanted for HCC. Early 3 months mortality was 74(12%). Mean MELD was 18. Main etiology for liver disease was HCV in 550 (90%) patients. 59 (9%) patients had portal vein thrombosis. 16 (2.6%) patients had left lobe graft. 5 cases of retransplant, 2 successful (one for early HAT and one for recurrent HCV) and 3 failed. 90/ 537(17%) had recurrent HCV. Biliary complications occurred in 177(34%), vascular complications in 48 (9%), recurrent HCC in 19(10%).
PP-36
Re-assessment of Live Liver Donor Exclusion Criteria
Samy Kashkoush, Mohamed Akhtar, Bassem Hegab, Weel O’Hall, Khaled Abdullah
King Fahad National Guard Hospital, Riyadh, Saudi Arabia

Abstract:
Background: Proper selection of live liver donors is crucial for both donor safety and transplant recipient outcome. Excessive rejection of potential donors, however, is a waste of medical resources and time which may be critical especially for sick recipients. Our aim was to study different causes of non-utilization of live liver donors in our center to optimize the donor selection process.

Methods: We retrospectively reviewed potential live liver donors for both adult and pediatric recipients who have reached the third stage of donor work up at our center between Nov. 2008 and July 2012. Reviewed data included: patients’ demographics, imaging studies, histopathological reports of liver biopsies, any additional tests, psychosocial evaluations and final decisions on donor acceptance.

Results: A total of 108 live liver donors have been reviewed during the study period with 38 of them (35%) being eventually accepted for donation. Of the 70 non-utilized donors, 28 (40%) had significant fatty infiltration that was mainly diagnosed by imaging studies and documented by liver biopsy in three borderline cases. Small remnant liver volume (less than 35% of the liver size) was the primary cause of exclusion in 21 (30%) candidate. The third most common cause for exclusion was unfavourable anatomic variations which were seen in 8 (11.4%) patients. Psychosocial issues were present in 6 (8.5%) patients; one of them had a drug addiction problem and the rest were hesitant to donate. Incidental radiological findings were seen in two patients including: multiple hepatic hemangiomas and renal cell carcinoma. One donor was diagnosed as Wilson’s Disease and one had cholestasis that was attributed to drug-induced liver injury. Three donors were accepted but not utilized due to recipient-related issues; one refused transplantation and two got too sick and died before transplantation.

Conclusion: Fatty liver and small remnant-liver volumes are the two most common causes of donor exclusion in our center. Re-assessment of donor exclusion criteria may help identify inappropriate donors early in the course of work up and thus reduce cost and save time.

PP-37
Outcome of Renal Function following Living Donor Liver Transplantation in Egyptian Patients
Maha M. Hussein, Hesham M. Taher, Mahmoud S. El Meteini, Amr A. Abd Alaal, Mohsen M. Maher
Ain Shams University, Cairo, Egypt

Abstract:
Background: Chronic kidney disease (CKD) is frequent following liver transplantation (LT). Pre-transplant renal dysfunction (RD) is an important determinant of post-transplant CKD however; the most common cause of end stage renal disease (ESRD) following LT is calcineurin inhibitors toxicity. Aim of this study was to evaluate the outcome of renal functions at one year following living donor liver transplantation (LDLT) in Egyptian patients with and without pre-transplant RD.

Methods: This is a single center study conducted on patients who had LDLT in the period between 2007 through 2009. Patients’ data were retrospectively reviewed and those who were transplanted for fulminant hepatic failure or had early post operative mortality (within three months) were excluded. Mild and moderate renal insufficiency (RI) at LT were defined as estimated glomerular filtration rate (eGFR) = (60–89 ml/hr) and (30–59 ml/hr) respectively. Post LT severe RI was defined as eGFR<30ml/hr. All patients were followed up for one year after surgery.

Results: A total of 66 patients were included. 21 patients (31.8%) had pre-transplant RI. Presence of diabetes mellitus was significantly more frequent in patients with pre-transplant RI. At one year following LT, eight patients (38.1%) had recovery of renal functions and 13 patients (61.9%) had persistent RI. Among patients with pre-operative normal renal functions, 13 patients (28.9%) developed mild to moderate RI at one year. Other 32 patients (71.1%) did not. Univariate analysis showed that age was the only factor significantly higher in patients with RI at one year post-operative but it was not significant by multivariate logistic regression analysis.

Conclusions: The incidence of post LT renal dysfunction in this study was 39.4% at one year post operative. Kaplan–Meier curves for survival were not significantly different in both groups.
PP-38
The Usefulness of Laparoscopic Hernia Repair in the Management of Incisional Hernias following Liver Transplantation
Bassem Hegab, Mohamed Rabei Abdelfattah, Ayman Azzam, Hatem Khalaf, Fahad Barrehiz, M. Al Sofyaryan and M. Al Sebayel
King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia

Abstract:
Background: Incisional hernias occur in about 4.6 to 17.2% of patients after liver transplantation. Post-operative wound complications are less frequent after laparoscopic repair while maintaining low recurrence rates. We present our experience in managing this complication.

Patients and Methods: Prospectively collected data of all patients who underwent deceased or live donor liver transplantation (LDLT) and developed incisional hernias were analyzed. Following laparoscopic incisional hernia repair, all patients were followed up for a median of 12 months.

Results: A total of 242 liver transplantations were performed in 232 patients (10 re-transplantations) between 2001 and 2009. Thirteen recipients developed incisional hernias after primary direct closure of the abdominal wall with an incidence of 5.4%. Two out of the 13 recipients were re-transplantations. All of them underwent laparoscopic repair of incisional hernia. One patient (7.7%) was complicated by abdominal haematoma between the mesh and the omentum, which was managed by laparoscopic re-exploration. No recurrence or wound infections occurred.

Conclusion: Laparoscopic incisional hernia repair after liver transplantation is a safe procedure with low risk of infection or recurrence.

PP-39
Liver Transplantation for Hepatitis C: A Single-Center
Cihan Fidan, Aydincan Akdur, Mahir Kırnap, Feza Karakayali, Haldun Selçuk, Gökhan Moray, Mehmet Haberal
Baskent University Faculty of Medicine, Ankara, Turkey

Abstract:
Introduction: Hepatitis C virus (HCV) related end-stage cirrhosis is one of the leading indications for liver transplantation (LT) in many countries. Unfortunately, however, HCV is not eliminated by transplantation and graft re-infection is universal, resulting in fibrosis, cirrhosis, and finally graft decompensation. The aim of this study was to evaluate the efficacy of LT in patients with hepatitis C.

Material and Methods: The results were retrospectively analyzed from 19 patients, who underwent LT for hepatitis C, from 2001 to October 2012 at our liver transplant center in Turkey.

Results: We performed 173 adult liver transplantation and 19 (10,9%) of them were due to Hepatitis C virus (HCV) related end-stage cirrhosis at our center. 4(21,1%) of them were cadaveric LT and 15(78,9%) of them were living related LT. Ten (52,6%) patients were male and 9 (47,4%) were female. The mean age of the patients were 36 years old (range, 24 to 57 years). In addition to HCV, 9 patients (47, 4%) also had hepatocellular carcinoma (HCC) and 1 HBV and HCC (5, 2 %). Three patients developed recurrence of HCC and six patients developed recurrence of HCV. Seven patients passed away during the follow-up period. Causes of death included sepsis (3), recurrence of HCV and chronic rejection (2) and recurrence of HCC (2).

Conclusions: Our results suggest that LT can produce acceptable outcomes also for patients suffering from HCV-related cirrhosis.
PP-40
Living Donor Liver Transplantation to a Pediatric Patient in the Absence of Inferior Vena Cava: A Case Report
Aydincan Akdur, Mahir Kırnap, Oya Balcı Sezer, Figen Özcay, Ali Hamran, Gökhan Moray, Mehmet Habeler
Baskent University Faculty of Medicine, Ankara, Turkey

Abstract:
Introduction: Budd–Chiari syndrome (BCS) is rare disorder, characterized by the obstruction of hepatic venous outflow. However, performing living donor liver transplantation (LDLT) without replacement of the hepatic inferior vena cava (IVC) presents certain challenges. We report a case of successful adult-to-pediatric LDLT for BCS, achieved by performing an end-to-end anastomosis between the suprahepatic IVC and graft hepatic vein.

Case Report: A 13-year-old girl was admitted with chronic liver failure due to Budd-Chiari syndrome with an absence of the inferior vena cava. A prior diagnosis of Budd-Chiari syndrome had been established by pediatric gastroenterologists two years ago. On admission, the laboratory values were a Model for End-stage Liver Disease (MELD) score of 14 and a Child-Pugh score of B-9. Computed tomographic (CT) images of the thoracic and abdominal regions showed the absence of a retrohepatic inferior vena cava, with pronounced dilatation of the paravertebral venous plexus as well as of the cutaneous, iliac, hemiazygos, and azygous veins. We performed LDLT with an end-to-end anastomosis between the left hepatic vein of the donor and the patient’s suprahepatic vena cava. After transplantation, there were no any vascular complications seen. At the early stage of surgery biliary leak has seen and were treated with interventional radiologic techniques. The patient recovered uneventfully and has been doing well for six months.

Conclusion: Because of difficulties in the supply of cadaveric organs, living donor liver transplantations are performed for increasing numbers. BCS associated with trombosis of the inferior vena cava were present in a potential recipient of living donor liver transplantation. This case report documented living donor liver transplantation as a treatment modality for a patient with absence of the inferior vena cava due to chronic liver failure.

PP-41
Last Minute Donor Exclusion in Living Donor Liver Transplantation (LDLT): Impact on Evaluation Program
Hany Shouroum, Hossam Eldeen Saliman, Osama Hegazy, Wael Abdel-Razek, Nirmeen Fayed, Ibrahim Marawan
National Liver Institute, Menofya University, Shebeen El Koom, Egypt

Abstract:
Introduction: Minimizing the risk imposed to a healthy donor is one of the complex aspects of LDLT and implies a highly scrutinized evaluation process. Nevertheless, late events could lead to exclusion of some of those evaluated donors. Aim: To investigate the late causes of exclusion of a potential LDLT donor and how far these reasons contributed to changing our donor evaluation program.

Method: Throughout 10 years, more than 2500 potential living donor had been evaluated for liver donation for about 1500 recipients who presented for LDLT in National Liver Institute, Menoufia University. From them, only 194 were transplanted. The evaluation records of those donors were retrospectively analyzed for causes of late exclusion.

Results: Only 15% of the evaluated potential donors were accepted for donation and only 7.8% were donated. Exclusion reasons included family pressure to withdraw consent in one donor, substance abuse in two donors and late psychological instability in two donors. Early pregnancy was discovered in one female donor two weeks pre-transplantation. One donor was convicted and imprisoned two weeks before LDLT. The pre-operatively revised blood group of another donor was discovered to be incompatible as the previously determined blood group was wrong. The presence of Factor V Leiden homozygous mutation was diagnosed in two donors. In four cases, LDLT was aborted after donor laparotomy due to macroscopic diffuse hepatic changes considering the liver unsuitable for donation. Most of these exclusions evoked discussions led to modifications in the evaluation protocol and had an impact on both donors and recipients.

Conclusion: Late pre-transplantation donor exclusion had its impact in donors, recipients and resources. Reassessment of the donor evaluation protocol should be a dynamic process, and it found to be greatly affected by these late exclusions.
Pregnancy and the Process Following Liver Transplantation; Three Case Reports

Mahir Kirnap, Cihan Fidan, Aydincan Akdur, Polat Dursun, Sedat Yildirim, Gökhan Moray, Mehmet Haberal
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Abstract:
Aim: The first known pregnancy following liver transplantation was in 1978. For many years, there have been serious concerns over both the effect of pregnancy on the transplantation and the effect of immunosuppressive agents on the fetus. Deshpande, et. al. reported the results of a research based on 4706 successful pregnancies and graft functions in 3570 patients with kidney transplantation between 2000 and 2011. A significant amount of this data was derived from National Transplantation Pregnancy Registry. Employing an immunosuppressive treatment to the patients with liver transplantation increases the risk of hypertension, preeclampsia, prematurity and low birth weight. When compared to the general pregnant population, the incidence of hypertension (% 34) and preeclampsia (% 22) was found to be higher in patients with liver transplantation. There wasn’t any statistically significant difference in the incidence of fetal malformations between general population and the pregnant women with liver transplantation. It was also found that pregnancy didn’t affect graft functions and survival.

Case Report: In our center, the pregnancy, natal and postnatal periods of three women with liver transplantations, which were performed in 1988 and 2006 due to Wilson disease and in 1999 owing to cryptogenic cirrhosis, were examined and assessed. When these patients became pregnant, they were at the age of 21, 24 and 29, respectively. All of the three patients were using tacrolimus as an immunosuppressive and the drug levels of them were closely followed during pregnancy. Micofenolate mofetil and steroid treatment of these three patients were stopped before pregnancy. USG scanning, laboratory examinations and fetus evaluations were performed regularly every month. Two of these pregnant women gave birth through vaginal channel in the 39th week. There wasn’t any problem for both the infant and the graft functions in the post-operative period. The third patient is in her 20th week and still pregnant.

Conclusion: When we examine these three cases in terms of pregnancy and graft functions following a liver transplantation, they provide the evidence that patients in their reproduction age can have a healthy pregnancy period without having serious difficulties, of course with a close and careful follow-up.

Discussion: Although conceiving a baby is possible after liver transplantation, it should be remembered that the rates of complications are relatively higher when compared to general population. Pregnancy care requires a multi-disciplinary approach as well as high motivation and compliance of the pregnant patient.

Liver Transplantation for End-Stage Alcoholic Liver Disease: A Single-Center Experience

Aydincan Akdur, Mahir Kirnap, Feza Karakayali, Haldun Selcuk, Sedat Yildirim, Gokhan Moray, Mehmet Haberal
Baskent University Faculty of Medicine, Ankara, Turkey

Abstract:
Introduction: Alcoholic liver disease (ALD) is one of the leading indications for liver transplantation (LT). However, few studies have focused on the post-transplant outcomes of this population. The aim of this study was to evaluate the efficacy of LT in patients with ALD.

Materials and Methods: The results were retrospectively analyzed from 14 patients, who underwent LT for ALD, from 2001 to October 2011 at the liver transplant center of Baskent University in Ankara, Turkey.

Results: We performed 164 adult liver transplantation and 14 (8.5%) of them were due to ALD. Five (35.7%) of them were deceased-donor LT and 9 (64.3%) of them were living related LT. The 14 patients were all male with a mean age of 50 ± 6.5 years (range, 35–65 years). The average MELD (Model for End-stage Liver Disease) score was 18 and the mean follow-up was 38 ± 28 months. In addition to ALD, 2 patients (14.2%) also had HBV, 2 had HBV and hepatocelluler carcinoma (HCC) (14.2%), and 1 had HCC (7.1%). Six patients died during the study period. Causes of death included sepsis (n=4), cardiac failure (n=1) and lung carcinoma (n=1). There were two biliary stenosis after transplantation. Acute renal failure occurred in one patient during the postoperative period and was treated with hemodialysis. There was no intermittent drinking after LT among any of the patients.

Conclusions: ALD is a good indication for LT, with similar results in non-ALD patients. The major cause of death in ALD patients after LT was infectious complications. More attention is needed for the prophylaxis of infectious complications after LT.
PP-44
Liver Transplantation Due to Fulminant Hepatic Failure: A Single Center Experience
Aydincan Akdur, Mahir Kırnap, Nihal Uslu, Figen Özçay, Feza Karakayali, Gökhan Moray, Mehmet Haberal
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Abstract:
Introduction: Fulminant Hepatic Failure (FHF) is a clinical condition characterized by a severe, acute decline in liver function associated with encephalopathy. FHF is defined as an international normalized ratio of at least 1.5 and any degree of mental alteration (encephalopathy) in a patient without preexisting cirrhosis and with an illness of more than 26 weeks’ duration. FHF is a potentially fatal condition if emergency liver transplantation (LT) is not performed. In this study, we examined the epidemiology, causes, complications, and mortality of liver transplantation following fulminant hepatic failure at our hospital.

Material and Methods: Among the 335 liver transplantations (LT) performed from September 2001 to November 2012, 32 of them (9.5%) were performed for FHF in 25 pediatric and 7 adult cases. We retrospectively analyzed the data of these patients. Results: 4(12.5%) of them were cadaveric LT and 28(87.5%) of them were living related LT. The 18 (56.3%) patients were male and 14 (43.7%) patients were female. The patients mean age were 12.5 years old (range, 18 month to 42 years). The etiology of the FHF was; acute hepatitis B in four cases, hepatitis A in eight cases, hepatitis non A non E in 7, Wilson disease in eight cases, autoimmune hepatitis in two cases, CMV hepatitis in 1 and toxic hepatitis in 2. Seven patients passed away after the early period of transplantation (brain death; n=4, sepsis; n=3). Two patients developed chronic rejection during the long term follow up. There was not any donor mortality or major morbidity.

Conclusions: LT should be considered one of the first-line treatment options in patients with FHF. LT offers a safe and effective modality of treatment for FHF for both pediatric and adult patients. In this study, results appear comparable to other liver transplant recipients.

PP-45
Prediction of Blood Loss in Adult Liver Transplantations from Preoperative Variables
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Abstract:
Introduction: Liver Transplantation (LT) has the potential for excessive blood loss with massive transfusion requirements. Patients with chronic liver disease (CLD) have underlying coagulopathy. Surgical bleeding may be due to presence of collaterals due to portal hypertension or from adhesions due to previous abdominal surgery. Aim: To identify preoperative factors associated with high blood loss during LT for CLD.

Method: 41 adult patients undergoing living donor liver transplant (LDLT) for CLD were included. Preoperative variables with a previously demonstrated relationship to increased intraoperative transfusion requirements were identified from literature. The population was divided into two groups based on median blood loss during LT.

Results: 41 consecutive patients of age 45.3±7.5 year, CTP 10.3±1.8, MELD 22.5±5.1, M:F 24:17 were included. Median intraoperative bld loss (IOBL) during surgery was 5800 ml (646 - 16000 ml). 24 pts had IOBL>5.8 L (Gp I), and 17 had IOBL<5.8 L (GpII). On analysis, there was no significant difference between Groups I and II regarding age, (43±8 vs 48±6, p=0.08); CTP (10±1.8 vs 10.5±1.8, p=0.7); MELD (23±5 vs 22±5, p=0.4); HVPG (17.4±6 vs 18±, p=0.9); platelets (99±66 vs 86±32, p=0.5); INR (2.5±0.9 vs 2.1±0.8, p=0.02); fibrinogen (132±81 vs 208±91, p=0.07); Ddimer (3.4±1.1 vs 2.5±2, p=0.2); FDP (18±4±7 vs 16±7, p=0.5); TEG variables [R1(11.5±9.2 vs 10±3.4, p=0.6); K1(4.1±2.2 vs 5.4±1, p=0.4); MA(42±22 vs 51±12, p=0.3) and duration of surgery (16±3 vs 15.8±2.8, p=0.7); anhepatic time (16±5 vs 14±5, p=0.3) and clamp time (66±32 vs 56±18, p=0.7)] There was no significant difference in incidence of spontaneous bacterial peritonitis between the two groups (22% vs 25%); portocaval shunt during surgery (64.2% vs 58.3%). However, the two groups differed significantly in terms of baseline Hb (8.2±1.5 vs 10.1±1.6, p=0.006) and ascites Gp I median 3400ml (1200±12000ml) vs GpII median 1L (600ml±5L), p=0.03. Intraoperative blood loss correlated with baseline Hb (r=-0.425, p=0.03) but not with ascites (r=0.938, p=0.14).

Conclusion: Intra operative blood loss correlated with preoperative Haemoglobin; but not with baseline CTP, MELD and pre existing coagulopathy. However the data needs validation in larger cohort of patients.
PP-46
Hepatic Venous Pressure Gradient as a Predictor of Blood Transfusion Requirements in Living Donor Liver Transplantation
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Abstract:
Background: Liver transplantation (LT) has been associated with major blood loss and the need for allogenic blood product transfusions. Intraoperative blood loss (IBL) in LT is unpredictable and each center evolves its own transfusion protocol. Hepatic venous pressure gradient (HVPG) indicates portal pressure and correlated with Child’s classification.

Aim: To assess the ability of preoperative HVPG to predict intraoperative blood transfusion requirements in LT.

Methods: 42 consecutive liver transplantations were studied. Patients were divided into two groups according to the median HVPG score. Preoperative variables with a previously demonstrated relationship to intraoperative transfusion were also identified from the literature. Blood loss and transfusion rate were determined for these two groups.

Results: Total of 41 patients underwent 42 LT (age 43.2±10.6yrs, M:F 24:17, CTP score 10.2±1.8, MELD 22.2±5.1). 22 patients had HVPG≥17mmHg and in 19 HVPG was<17mmHg. There was no significant difference with respect to age (47±7 vs 41±10yr, p=0.07), CTP (10.7±1.7 vs 9.6±1.8, p=0.13), MELD (23±4.5 vs 22±6, p=0.4), haemoglobin (9±1.7 vs 9±2gm%, p=0.8), fibrinogen level (143±81 vs 197±101, p=0.1), D-Dimer (3.1±1.5 vs 4.2±2.4, p=0.2), TEG (K, 5.3±4.0 vs 5.2±1.6, p=0.6), Portal vein trifurcation was present in 9 donors (7.1%) and small for size liver (by volumetry) in 6 donors (4.8%) being the main surgical contraindications for donation. Other causes included biliary anomaly, abnormal liver histology, abnormal liver enzymes, dyslipidemia, thyrotoxicosis, abnormal protein C and abnormal antithrombin III.

Conclusion: HVPG is not a predictor of intraoperative blood during liver transplantation.

PP-47
Causes of Disqualification of Egyptian Potential Living Liver Donors
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Abstract:
Introduction: Liver cirrhosis is a major health problem in Egypt. Liver transplantation is the only curative treatment in patients with end-stage liver disease. Due to absence of deceased-donors, Living-donor liver transplantation (LDLT) has emerged as an option to the traditional deceased-donor transplantation procedure. But there is an essential risk related to liver resection for healthy donors. Preoperative evaluation of potential donors enables selecting a suitable donor with optimal graft quality and ensuring donor safety. The aim of this work is to identify and analyze the causes of disqualification of potential living liver donors.

Patients and Methods: From June 2010 till June 2012, all potential living liver donors for 66 potential recipients for liver transplantation were screened and worked up at Ain Shams Center for Organ transplantation. Potential donors were evaluated in a stepwise manner, including medical, physical, laboratory, psychosocial, and imaging assessment. Data regarding potential donors were retrospectively reviewed. Reasons for rejection of disqualified donors were analyzed.

Results: 192 potential living liver donors, 157 (81.7%) males, for 66 potential recipients for liver transplantation were screened. 126 (65.6%) were disqualified of donation. Causes of donor rejection were classified to surgical causes (n = 12) (9.5%) and medical causes (n = 114) (90.5%) of rejection. Five donors (3.9%) were rejected due to multiple causes. Factor V Leiden mutation was detected in 29 (23%) (p=0.001), positive hepatitis serology in 25 donors (19.8%) (p=0.005), positive drug abuse in 16 donors (12.7%) of the rejected donor group being the main medical contraindications for donation. Portal vein trifurcation was present in 9 donors (7.1%) and small for size liver (by volumetry) in six donors (4.8%) being the main surgical contraindications for donation. Other causes included biliary anomaly, abnormal liver histology, abnormal liver enzymes, dyslipidemia, thyrotoxicosis, abnormal protein C and abnormal antithrombin III.

Conclusion: Factor V Leiden mutation is a significant cause of rejection of Egyptian potential living liver donors. Stepwise approach of the donor is cost-effective. Apparent healthy donors are not usually candidates for liver donation.
Peri-operative Levels of Lactate in Living Donor Liver Transplantation (LDLT)
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Abstract:
Background: The liver has an important role in the elimination of blood lactate. This role could be emphasized during liver transplantation as lactate accumulates during the anhepatic phase.

Aim: To investigate the potential role of lactate elimination in assessment of primary graft function in LDLT.

Patients and Methods: Thirteen consecutive recipients of LDLT were prospectively included in the study. Lactate level was measured intra-operatively in a hepatic vein (HV) after perfusion, and arterially 12 h post-operatively then on post-operative days (POD) 1 and 5. Patients were categorized according to the consumption of blood lactate by comparing the lactate level on POD1 to that in the HV post-perfusion. Group A, included four patients who showed no change or an increase in the level of lactate, and group B, included 9 patients who showed decrease of lactate. Early graft function was assessed by follow-up bilirubin, cholesterol, and INR on postoperative days 0, 1, 3 and 5.

Results: MELD score was significantly higher in group A 19.8±2.2 vs. group B 13.89±2.6 (p=0.002). Pre-operative bilirubin (4.9±1.6 vs. 2.8±1.4, p=0.033) and not INR (1.8±0.3 vs. 1.5±0.2, p=0.054) was also significantly higher in group A. Pre-operative lactate in group A was 16.3±6.2 compared to 18.4±6.5 mg/dl in group B (p=0.582). The intra-operatively calculated graft/recipient weight ratio was comparable in both groups (0.9±0.2 vs. 1.0±0.2, p=0.347) as were cold ischemia time (57±17.1 vs. 59±19.1 min, p=0.865) and warm ischemia (43.8±18.9 vs. 45.0±9.4 min, p=0.873). Patients in group A received significantly more units of packed red blood cells (7.5±2.5 vs. 1.3±1.3, p<0.0001). The operative duration was 12.5±3.1 in group A vs. 12.7±1.5 hours in group B (p=0.896). Arterial lactate 12h post-operatively was significantly higher in group A than in group B (42.0±5.4 vs. 22.8±5.3 mg/dl, p<0.0001). Lactate levels on POD3 and 5 were comparable. INR, bilirubin, and cholesterol were comparable in both groups on POD0, 1, 3 and 5. The hospital stay was 15.0±2.2 vs. 21.6±11.2 days in groups A and B respectively (p=0.125).

Conclusion: Early lactate consumption by the graft could reflect the severity of liver disease. Lactate level could be affected by the intra-operative transfusion of blood products which might impair its ability to predict the primary liver graft function.
PP-50
Metastatic Hepatocellular Carcinoma after Liver Transplantation through the Preoperative Needle Track Biopsy. A Case Report and Review of Literature
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Abstract:
Background: The incidence of needle track seeding following biopsy of a hepatocellular carcinoma (HCC) is about 2.7%. Recurrent subcutaneous seeding of HCC after liver transplantation has been very rarely reported.

Methods: We present a case of 70-year-old man with Hepatitis B virus cirrhosis and a liver lesion with normal alpha-fetoprotein (AFP) suspected to be HCC. He had ultrasound guided fine-needle liver biopsy which confirmed HCC. One month later, he underwent deceased donor liver transplant. Unfortunately, he developed metastatic HCC in the chest wall and the subcutaneous tissue through the needle track four years post liver transplant. Surgical resection of the needle track with safety margins was performed.

Conclusions: Needle track seeding following biopsy of HCC is underestimated. Decision to biopsy a ‘suspect’ HCC lesion in the setting of liver transplantation depends on clinical picture and unit policy. In patients where liver transplantation is not an option, lesion suspicious of being HCC, there is a place for needle biopsy if it will impact management. Surgical resection achieving negative margins is the treatment of choice with long term outcome.

PP-51
Clinical Outcomes of Third Liver Transplantation
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Abstract:
Introduction: Although three or more liver transplantation (LT)s in the same patient arouse not only medical but also ethical issues in the context of organ shortage, it is a fact that additional liver retransplantation (rLT) is the only lifesaving treatment option for those with graft failure after a second LT. However, little is known regarding the risks and benefits associated with a third LT.

Materials & Methods: We analyzed 15 cases of third LT and 48 of second LT performed between January 2000 and December 2010. Clinical outcomes were compared with those of second LT cases performed during the same period.

Results: Model for end-stage liver disease (MELD) scores at transplant was similar between the two groups. As for surgical aspects, there was no significant difference in operative time or number of units of red blood cells transfused during the transplant procedures between the groups. Patient and graft survival after the third LT at 1, 3, and 10 years were 66.7, 51.9, and 44.4 %, and 66.7, 51.9, and 29.6 %, respectively. There was no significant difference in patient or graft survival between the groups. However, graft loss within three months after the third LT was significantly higher than that of second LT patients.

Conclusion: Third LT cases showed acceptable short- and long-term outcomes that were not significantly inferior to those of a second LT. Careful patient care especially in the early phase after a third LT may be essential to improve the outcome.
PP-52
Long Term Transplant Outcome of Hepatitis B Virus and Hepatitis Delta Virus Coinfection

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Abstract:
Background and Aim: Hepatitis B Virus (HBV) and Hepatitis Delta Virus (HDV) coinfection often leads to severe chronic hepatitis and cirrhosis. Data on long term outcome of liver transplantation (LT) for coinfected patients is limited. The aim of this study was to assess the prevalence of HBV and HDV coinfection in our transplant population and to evaluate its long term impact on LT.

Methods: Between January 1990 and December 2011 a total of 133 (106 males and 27 females) patients were transplanted at our center for HBV related cirrhosis. 32 (24%) patients were coinfected with HDV while 70 patients tested negative for HDV. The HDV status was not available for 31 patients. All patients received post-transplant combination therapy with nucleos(t)ide analogue and anti-hepatitis B immunoglobulins. Breakthrough infection was defined as re-emergence of HBV-DNA or HBsAg while on treatment.

Results: Patients were followed for an average of 82 months (range 1-274). Post LT survival and HBV recurrence during the follow up period were 89% and 11%, respectively. All 15 patients developed breakthrough infection while on monotherapy and were controlled with switching or adding another oral agent. Factors associated with disease recurrence included: younger age (44 vs 51.4 years, p=0.0162), positive pretransplant HBeAg (60% vs 14%, p<0.005), detectable pretransplant HBV–DNA (80% vs 37%, p=0.008), and positive post–transplant HBsAg (80% vs 4%, p<0.005). Patients with HBV and HDV coinfection were similar to HBV monoinfected patients in terms of age at time of transplantation (47 vs 51 years, p=0.14), pre–transplant model for end stage liver disease (MELD) score (22 vs 20, p=0.28), and disease recurrence post LT (6% vs 11%, p=0.41). Delta infection was not a significant predictor of death as none of the patients who had HDV died.

Conclusion: Despite the aggressive course of HBV and HDV coinfection in immunocompetent patients, LT outcome is similar to HBV monoinfection.

PP-53
The Impact of Anatomical Variations and Insufficient Liver Volume on Living Liver Donation

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Abstract:
Background: Organ shortage has been the ongoing obstacle to expand liver transplantation worldwide including Saudi Arabia. Living donor liver transplantation (LDLT) was hoped to improve this shortage. The aim of the present study was to analyze the impact of variant anatomy and insufficient liver volume on living donation.

Methods: From July 2007 to May 2012, a total of 147 deceased donor liver transplants and 139 LDLT were performed at our institution. 600 potential living donors were worked up according to a step-wise evaluation protocol. Those with BMI >28 were not worked up. The age of worked up donors ranged from 18 to 50 years (mean=28). They were all first and second degree relatives of the patients.

Results: Only 139 (23%) donors were accepted for donation and 461 (77%) were rejected. Some were excluded either at initial screening due to incompatible blood group, positive hepatitis serology, elevated liver enzymes. Others were rejected because of significant steatosis, socioeconomic reasons or for reasons related to recipient status. 78 (13%) potential donors were rejected because of variations in biliary anatomy and 16 (2%) others were rejected because of portal and hepatic vein anatomical variations. 106 (18%) potential donors were rejected due to insufficient remnant volume (<30%) as determined by CT volumetry, while 21 (3.5%) were rejected because of graft to body weight ratio less than 0.8%.

Conclusion: There’s no doubt that LDLT has helped in alleviating the severe shortage of deceased organs in Saudi Arabia. However suitable living donors are not easy to find especially with prevalent hepatic steatosis. Over 35% of the potential donors were rejected because of either anatomical variations or inadequate liver volumes. Our initial evaluation is effective in eliminating a large number of unsuitable donors. The donor evaluation process indeed remains to be a large burden on the resources of our program.
PP-54
Recurrent Disease after Living Donor Liver Transplantation: Risk factors, Management and Outcome
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Abstract:
Background and Aim: The greatest threat to the long-term success of liver transplantation is the recurrence of the original disease which can occur for most of the primary causes of liver failure. Although the initial concern about recurrent disease mainly related to viral hepatitis, recurrence of nonviral liver disease has been shown to lead to graft failure. This study aimed to analyze the factors responsible for disease recurrence after LDLT and the effect of disease recurrence, and its management on the outcome of LT.

Subjects and Methods: After exclusion of (six months mortality), 45 alive transplanted patients were enrolled in the current analysis in the follow up duration from 6 months to 60 months. (The demographic, preoperative, intraoperative, and postoperative data) were studied in a descriptive study of pediatrics and adults. Univariate analysis and then multiple analysis were done to detect the relationship between (demographic preoperative, intraoperative, and postoperative data) and overall recurrence, and between recurrence variables, and total survival in adults in the follow up period, after LDLT.

Results: Sixty nine patients underwent LDLT in our institute from the start of LDLT program at 28 April 2003 until the end of December 2009. The present retrospective study included 40 five patients in the follow up duration from 6 months to 60 months. The 45 patients were classified according to age into pediatrics <18 years, and adults >18 years. The pediatric group was 14 patients (31.1%), and the incidence of recurrence of primary disease was 1/14(7.1%), this case was Budd Chiari syndrome. The all pediatric mortality was 4/14((28.6%). The adult group were thirty one patients (68.8%), and the incidence of recurrence was 15/31(48.4%) of patients. On univariate analysis, there was no statistically significant predictors of recurrence regarding (demographic, Preoperative, intraoperative, and postoperative data) and overall recurrence, and between recurrence adults was (83.9%), (93.7%), and (73.3%) respectively.

Conclusion: Recurrence of primary disease after LDLT is confirmed in our study with the least incidence in children and the highest in adult HCV patients. Similarly, it was higher in the following patients (males, with CMV infections, with co-morbidity, with post operative complications, and patients with acute rejection). Recurrence of primary disease after liver transplantation decreases post transplantation survival. However, the effective management of recurrence improves post transplantation survival. The hospital mortality post LDLT was the highest mortality, and this was due to (vascular, rejection, and septic complications) accordingly, most efforts should be paid to this critical period to decrease such increased mortality.

PP-55
Post LDLT Biliary Complication; Incidence, Impact of Anatomical Variation and Management
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Abstract:
Objective: In this article we have assessed the incidence of biliary complications after living donor liver transplantation, the impact of biliary variation and management in our center.

Methods: From June 2004 to September 2012, 76 consecutive living donor liver transplantations were performed. Ten patients died within one month were excluded from the study. The database was evaluated retrospectively. Biliary complications were diagnosed according to clinical, biochemical and radiological tests. The number of biliary ducts in the transplanted graft, the surgical techniques used for anastomosis, biliary strictures and bile leakage rates, and its management were analyzed.

Results: Of a total of 66 grafts, 46 involved a single bile duct, 19 had two bile ducts and in one graft there were three bile ducts. In 56 transplants, the anastomosis was performed as a single duct to duct, in 2 transplants double duct to ducts, and in eight transplants as a Roux-en-Y reconstruction. In all, 12 bile leakages (18%), 10 biliary strictures (13.6%), and two bile duct stones were observed in 18 patients resulting in a total of 24 biliary complications (36.3%).

Conclusion: Biliary complications after liver transplantation are common and continue to be a big problem. Biliary anastomosis has been considered the ‘Achilles’ heel’ of liver transplantation. Congenital anomalies of biliary anatomy of the liver are not uncommon, and consider an important risk factor in biliary complication. However, the general prognosis and outcome of biliary complication has been progress, due to the great advances in the endoscopic and percutaneous interventions.
PP-56
Post Living Donor Liver Transplantation Biliary Complications, Is It avoidable?
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Abstract:
Introduction: Biliary complications (BCs) remain a major cause of morbidity and mortality after living donor liver transplantation (LDLT).

Methods: 194 LDLTs was done in National Liver Institute, Menoufiya University, Egypt, up to November 2012 and retrospectively revised. The aim of this work is to study post LDLTs biliary complications rate and its probable related risk factors and to provide a guide to avoid it.

Results: BCs occurred in 71 (36.5%) out of the 194 recipients. The complications included bile leak in 42 recipients (21.6%) and biliary strictures in 40 recipients (20.6%). 30% of cases had stricture followed bile leak. The site of leak appeared to be anastomotic in 34 cases (81%) while it was from the cut surface of the graft in eight cases (19%). There were no statistically significant differences between recipients who had biliary complications and those who did not have, regarding graft to recipient body weight ratio, cold ischemia time, warm ischemia time, type of biliary anastomosis, number of graft bile ducts, number of biliary anastomosis, presence of biliary stent or not CMV infection and other potential risk variables. It is essential to perform intra operative cholangiography at every donor hepatectomy and to preserve a well vascularised graft hepatic duct. Ductoplasty could disturb the blood supply in the intervening tissue and should be avoided. Latrogenic injury of graft bile duct during fixation of biliary stent led to biliary leak in some cases.

Conclusion: Biliary complications are one of the most serious complications following LDLT. Anatomical consideration and technical refinement may be useful to reduce or even prevent the high rate of occurrence of BCs.

PP-57
Modulatory Effect of Some Natural Plants Against the Hepatotoxicity Induced by Interaction between Cisplatin and Protein Malnutrition in Albino Rat
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Abstract:
Introduction: Protein-energy malnutrition is one of the major public health problems in developing countries of the world due to prevailing socio-economic problems. Cisplatin is one of the most active cytotoxic agents in the treatment of cancer. This study was carried out to determine if Fresh garlic homogenate “FGH”, ginko biloba extract “GBE” or silymarin “Sily” exerts a beneficial and its possible protective effect against cisplatin-induced hepatotoxicity in rats fed either normally or protein malnourished.

Methods: Sprague-Dawley rats weighing 250 ±30 gm were divided into two sets (Set I and Set II) each of eight groups, the 1st gp. used as control received orally 1ml/kg of 0.9 saline by an oral carrier vehicle on days 1 to 3, the 2nd , 3rd, 4th gps., were received 500mg/kg, p.o. FGH, 100mg/kg, p.o GBE and 200mg/kg, p.o. Sily. The 5th gp was injected with 15mg/kg cisplatin intraperitoneally (i.p.) on the 4th day, once only. Groups 6th, 7th and 8th received, FGH, GBE and silymarin for three days followed by single dose of cisplatin 15mg/kg, i.p. on the 4th day. Twenty four hours after treatment, the animals were sacrificed, the blood was collected for biochemical analysis, and biopsies were taken for ROS, antioxidant detection and for histopathological examination.

Results: Cisplatin significantly increased blood AST, ALT levels, and liver body weight ratio in NF group (P<0.05) compared to control NF. The reactive oxygen species “ROS” showed a significant (P<0.05) increase in malondehyde “MDA” and nitric oxide “NO” and significant (P<0.05) decrease in glutathione “GSH” and superoxide dismutase “SOD” when compared with control NF. On using FGH, GBE and silymarin, before cisplatin, the levels of AST, ALT and liver body weight ratio were significantly (P<0.05) decreased when compared to cisplatin group. The levels of MDA and NO were significantly (P<0.05) decreased and the activities of GSH and SOD were significantly increased (P<0.05) when compared with cisplatin alone. These results are the same with protein malnourished group but more worst with high significant (P<0.01) change either increase or decrease when compared with NF groups. The histopathological lesions in liver rats injected with cisplatin were improved on using FGH, GBE and silymarin before cisplatin either with NF or PM groups.

Conclusions: This study concluded that FGH, GBE and silymarin have a partial protective effect against the hepatotoxic effect induced from interaction between cisplatin and protein malnutrition.
Impact of Portal Vein Thrombosis on A-A Living Donor Liver Transplantation
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Abstract:
Introduction: In the early period of liver transplantation (LT), portal vein thrombosis (PVT) was considered an absolute contraindication for transplantation because of the technical difficulties it entailed, which is more pronounced in living donor liver transplantation (LDLT) because of restricted availability of a vein graft. The study is designed to explore the impact of PVT on the outcome of adult LDLT.

Patients and Methods: A total of 403 adult living donor liver transplantations were performed, between October 2001 and December 2010. 173 patients were excluded from this study, 230 patients was divided into two groups, group A (n=50) patients with PVT and group B (n=180) patients without PVT. Operative findings, postoperative complications and prognosis were compared between recipient with and without PVT.

Results: The amount of blood transfusion was similar in both groups, while the ischemia time was more prolonged in PVT group than in Non-PVT group p=0.014. There was no statistical significant difference in survival among both groups. 1 and 3 year survival rates were 70.6% and 57.2%, in PVT group and 81% and 62 % in non-PVT group. (Log-rank test, P=0.127) The incidence of overall complications was significantly higher in PVT 23/50 (46%) group than non-PVT group 60/180 (33.5%) p=0.001. The rate of post transplant PVT and infection were significantly higher in PVT group compared to the Non-PVT p<0.001. The incidence of postoperative renal impairment and renal failure were similar among both groups.

Conclusion: Although patients with PVT may have a higher incidence of postoperative complications (PV rethrombosis, infection), the patients' survival is similar to those recipients without PVT.

The Association of Promoter Gene Polymorphisms of the Tumor Necrosis Factor and Interleukin-10 with Severity of Lactic Acidosis during Liver Transplantation Surgery
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Abstract:
Background: Orthotopic liver transplantation (OLT) is a major operation, causing cytokine release and other inflammatory responses that can contribute to postreperfusion syndrome occurrence. During the systemic inflammatory response syndrome, increased lactate levels result from excessive cytokine production despite normal oxygen delivery and carbohydrate metabolism. The goal of the study was to determine the relationship between genetic polymorphisms in interleukin (IL)-10 ([1082G/A]) or tumor necrosis factor (TNF-α) ([376 G/A]) and lactate levels in patients during OLT surgery.

Patients and Methods: This prospective observational study in 40 consecutive adult patients who underwent OLT documented lactic acid levels at five times: Immediately after induction of anesthesia, at the end of the pre-anhepatic phase, at the end of the anhepatic phase, 1 hour after reperfusion, and at the end of surgery. Polymerase chain reaction (PCR; RFLP methodology) was used to examine IL-10 ([1082G/A]) and TNF-α ([376 G/A]) gene polymorphisms.

Results: Carriers of the IL-10/TNF-α genotype combination GG/GG showed significantly different changes in lactate levels at one hour after reperfusion and at the end of surgery. Lactate levels were significantly higher among patients heterozygous for TNF-α (AG genotype) compared with patients homozygous for TNF-α (GG genotype) at same times. In contrast, there was no significant difference among IL-10 polymorphic genotypes ([1082G/A]).

Conclusion: Genetic factors play a role in the development of lactic acidosis after OLT. IL-10 ([1082G/A]) and TNF-α ([376 G/A]) gene polymorphisms could influence the variability of lactate levels after liver transplantation surgery.
**Abstract:**

Background: Left-sided portal hypertension is a rare but important cause of upper gastrointestinal bleeding which is potentially curable. Most cases are secondary to splenic vein obstruction which can be intrinsic like thrombosis or extrinsic like pancreatic pathology or perirenal abscess.

Case Report: We report a case of left-sided portal hypertension in an 18-year-old female secondary to congenital hepatic fibrosis. She had multiple episodes of hematemesis and melena which required hospitalization and endoscopic treatments. She was referred for possible evaluation for liver transplantation. The case was correctly diagnosed with the help of interventional radiology and managed by splenectomy. In 13-month follow-up, she did not have any further bleeding. This case is unusual because splenic vein was patent and the right side of the portal venous system was being decompressed by a large spontaneous splenorenal shunt.

Conclusions: This case highlights the importance of measuring hepatic venous and portal pressures in portal hypertension and having the basic knowledge of anatomy and pathophysiology of portal hypertension for interpretation of the pressure data to reach correct diagnosis and for appropriate management.
Changing Trends of Liver Transplant Indications in Saudi Arabia
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Abstract:
Background and Aim: Hepatitis C (HCV) remains the leading indication for liver transplant worldwide. However, obesity is becoming an epidemic, rates of diabetes mellitus (DM) and metabolic syndrome are increasing and consequently the rate of Non alcoholic steatohepatitis (NASH) and Cryptogenic cirrhosis are increasing rapidly in Saudi Arabia, prevalence of obesity and diabetes mellitus are 35.5% and 23-27% respectively, our aim was to compare the rates of NASH/Cryptogenic cirrhosis as an indication for liver transplant over the past decade and to document if this increase in prevalence had an impact on our transplant indications.

Methods: A total number of 383 adult liver Transplantations were performed from 2001-2012. Their charts were reviewed and were divided into two groups. Group 1 from 2001-2008 (186 transplants), Group 2 from 2009-2012 (197 transplants)

Results: from 2001-2012, a total of 383 adult liver transplantations were performed from 2001-2008 (GROUP 1) there were 186 transplants, of which 93 of them (50%) had Hep C as an indication followed by 31 patients (17%) who had Hepatitis B and 22 (12%) who were cryptogenic /NASH from 2009-2012 (GROUP 2) there were 197 transplants done and while Hepatitis C remained the leading indication with 69 patients 35%, the number of patients labeled as cryptogenic/NASH requiring transplant has increased to 20% (40) patients and became the second indication surpassing Hepatitis B 16%(31) patients.

Conclusion: Liver transplantation for NASH/cryptogenic cirrhosis is increasing in Saudi Arabia by 67% over the last few years and currently is the second leading indication of transplant with the obesity and diabetes epidemic and with the newer antiviral therapy for Hep C it could certainly become the leading indication for transplant in the future.
PP-63
High Mortality of Mucormycosis in Patients with Liver Cirrhosis
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Abstract:
Introduction: Few cases of mucormycosis were described in patients with liver cirrhosis, mostly rhino-orbital. To our knowledge, only one case of upper extremity involvement was reported in cirrhosis. We are reporting the second case of upper extremity mucormycosis infection in the setting of liver cirrhosis.

Case report: We described a rare case of forearm infection originating in a traumatic intravenous access portal. This is a 25 year-old woman with liver cirrhosis secondary to autoimmune hepatitis; developed acute on chronic liver failure during the last trimester of pregnancy, which was terminated. During admission, she developed painful, erythematous lesion on her right forearm in the area of intravenous access, which later became necrotic. Extensive debridement was done and histopathological examination confirmed the diagnosis of mucormycosis. The patient started on Amphotericin B. Her condition continued to deteriorate and ended up with above elbow amputation followed by right shoulder disarticulation. She died two days later due to multi-organ failure. This is the second reported mortality of forearm mucormycosis and liver cirrhosis.

Mucormycosis in liver cirrhosis has been reported in 16 cases. Mucormycosis was not reported in Child A, there were 11 cases with Child C and 5 with Child B with the 2 survivals in Child B. The outcome is determined mainly by underlying risk factor; mucormycosis in diabetics has 60% to 90% the survival, where it is 20%-50% in Leukemia. In Cirrhosis it is 12.5% (2 out of 16 patients).

Conclusion: Mucormycosis carries high mortality in patients with liver cirrhosis despite aggressive treatment. From this case and in reviewing the literature, it seems that the general immune status and underlying risk factors of the patient determine the final outcome more than the particular treatment provided.

PP-64
Successful Thrombolytic Therapy in a Patient with Budd-Chiari Syndrome
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Abstract:
Introduction: Management of Budd–Chiari syndrome (BCS) includes different interventions and surgical procedures, there is limited data about the role of local thrombolysis in treating this condition, but appeared to be helpful in the case illustrated below.

Case Report: A 29 year-old lady referred with one month history of right upper abdominal pain, progressive abdominal distension and intermittent fever, not associated with rigors. No history of oral contraceptive use. She has mild right upper quadrant tenderness and abdominal distention with moderate elevation of liver enzymes, negative serology for viral hepatitis, autoimmune or cholestatic liver disease. Computed tomography (CT) angiogram of the abdomen showed large amount of ascites with extensive thrombosis of the inferior vena cava (IVC) involving the hepatic and left renal veins with complete occlusion of the left common iliac vein confirmed by venogram. Infusion catheter was placed through the thrombosed segment of IVC and right hepatic artery. Thrombolytic therapy was started with injection of 5 mg of recombinant tissue plasminogen activator (t-PA) as a loading dose, followed by 0.3 mg per hour. Enoxaparin followed by starting oral warfarin indefinitely. Ascites was well controlled with diuretics and large-volume paracentesis. Follow up venogram showed partial recanalization of IVC and hepatic veins. A repeat CT scan after 14 weeks showed complete resolution of the thrombus. After 28 months follow up, she is currently asymptomatic with normal liver function tests and total resolution of the ascites.

Conclusion: Even though the data on local thrombolysis is limited and the agents and doses are not uniform among reported cases, it can be considered in acute BCS with partial obstruction, followed by angioplasty or TIPS if unsuccessful.
**PP-65**

**Portal Vein Thrombosis in LDLT: A Dangerous Complication**

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**Jordan Hospital, Amman, Jordan**

**Abstract:**

Background: Vascular complications, though rare after LTX, are dangerous if they occur early. Most cases of arterial thrombosis in cadaveric LTX occur in pediatric age group but increasingly seen in LDLT with less serious outcome.

Case Report: We report here two cases of portal vein thrombosis with deadly outcome.

Patient and method: a 58 year old gentleman had transplant for HBV cirrhosis. He was found to have PVT five days post liver transplant during routine daily ultrasound. He also had worsening liver function and general condition though he is fairly stable. This was confirmed using CT venography. A trial of supportive treatment with adequate anticoagulation resulted in deadly outcome after 10 days due to sepsis and hypotension. The second case is a 54 year old woman who was transplanted for HCV ESLD and HCC. Within two hours of completing surgery she was found to have PVT on US and was confirmed by CT venography. She was rushed to OR, and a thrombus was removed from the portal vein and the portal vein was recanalized. The patient was hypotensive during surgery and developed acute renal failure necessitating hemodialysis, and recovered after two weeks but developed sepsis and passed away after four weeks.

Discussion: PVT is a rare event in LDLT. It is devastating because the new liver gets deprived of major blood supply. This is in contrary to arterial thrombosis in this group. Technical problems might be the cause though other factors and can not be ruled out especially with delayed thrombosis. Every effort should be made to avoid this complication.

Conclusion: PVT is extremely dangerous. Every effort should be directed at avoiding this complication. Early detection and surgical correction plus anticoagulation are probably the best approach.

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**PP-66**

**Viral Meningitis Post liver Transplant: Case Report**

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**Jordan Hospital, Amman, Jordan**

**Abstract:**

Background: Meningitis is rare post solid organ transplant.

Case Report: We report here a case of viral meningitis proved by CSF PCR for herpes simplex virus. Patient and method. We transplanted this 44 years old man from Yemen who lived long period in USA. He had HCV ESLD. The donor was his mother-in-law. The immediate post op course was as expected during the first week but he continued with poor concentration, fine tremors, mildly “Encephalopathic”. He was seen by neurology consult and MRI was done which showed brain atrophy for his age. He was treated for metabolic causes as was evident by the EEG tracing but without improvement. Lastly spinal tab was carried with normal cells but the CSF protein was elevated and was positive for HSV type 1 by PCR. During that period, he was found to have abdominal fluid collection which was drained and was positive for Acinetobacter and wound swab was positive for E. Coli and Histoplasma capsulatum. He was treated for meningitis, abdominal collection and wound infection and improved till eight weeks post LTX when he developed sepsis and work up revealed liver abscess which was enlarging rapidly until his demise.

Conclusion: Though extremely rare meningitis can occur with positive analysis though cell count was normal, and it might be related to severe immune compromisation. Treatment as in non immune compromised patients.
PP-67
Liver Transplant for Hepatocellular Carcinoma at Jordan Hospital
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Abstract:
Background: Liver Transplant is a well known treatment of HCC with or without liver failure. The standard selection of patients is within and extended outside Milan criteria. We report here the Jordan Hospital LTX for HCC with LDLT.

Patient and Methods: We have transplanted so far 13 cases of HCC since the program started since September 2004. Male:Female is 10/3, Age : 35-61 years old. Diagnosis of liver disease included: HBV, HCV, AIH and Cryptogenic liver disease.

Results: Of the patients survived more than three months post LTX, 11 patients are available for the study, survival was not different between the group with HCC and without HCC, and also the complications, one patient so far had recurrence and he died after 15 months and he was multifocal “Diffuse variety” with vascular invasion.

Discussion: liver transplant is a viable option for patients with HCC and chronic liver disease. There was no significant difference in survival regarding Milan or extended Milan criteria without vascular invasion. The etiology of liver disease did not make a difference also. Invasion of the blood vessels appeared to be the most important factor for recurrence. The use of anti tumor like Immunosuppression or Sorafenib is not sufficient to make reasonable conclusions.

Conclusion: Liver transplant is an acceptable treatment modality in certain patient even with living donor LTX and extended criteria for HCC selection.

PP-68
Regional Variation in Organ Donation in Saudi Arabia
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Abstract:
Background and Aim: Cadaveric organ donation started in 1986, out of 8820 cases reported, 4661 cases documented, and 1384 donors harvested since the program inception until the end of 2011, with conversion rate of 29.7%. There is marked regional variation in organ donation among different region of Saudi Arabia. Our aim is to study the reasons for this variation in order to improve organ donation in areas of low donation rate.

Method: Saudi Center for Organ Transplantation (SCOT) data for cadaveric organ donation from 2006-2011. The overall donation rate as well as the percentage of harvested cases per region as well as the conversion rate (harvested/Documented) was reviewed.

Results: Between 2006 -2011, 448 cases procured form Saudi Arabia, of which 343 where procured for central region representing 76.5% coming from 30 out of 97 contributing ICU’s (31%), the eastern region came second with 49 cases (11%) followed by the western region with 35 cases (7.8%) while northern and southern region had 12 and 9 cases (2.7&2%) respectively. The conversion rate followed a similar trend. This is related to the presence of active mobile donor team in Riyadh (the capital) as well as active transplant centers.

Conclusion: There is marked variation with regards of contribution to organ donation in different regions in Saudi Arabia. This is related to the presence of active mobile donor team in the central region. A similar trend towards increasing number of cases and conversion rate was observed in the eastern region after having a new mobile donor team. We suggest that having active well-trained mobile donor team in each region will increase the number of cadaveric donor at least three folds in the next 3-5 years.
88

PP-69
Decreasing HCV Prevalence among Hemodialysis Patients in Saudi Arabia
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Abstract:
Background: The prevalence of HCV in dialysis units is variable worldwide, ranging between 5% in some western countries and up to 70% in some developing countries. The reported prevalence of HCV in HD patients in Kingdom of Saudi Arabia (KSA) is highly variable ranging between 15% and 80%. The number of patients on HD in Saudi Arabia has increased from 3737 patients in 1995 to 11437 patients in 2010 with an annual increase of 7.9%. Aim: To study the change in prevalence of HCV infection among HD patients in Saudi Arabia over the past three decades.

Method: We performed a retrospective analysis of local epidemiologic studies from 1995 as well as the Saudi Council of Organ Transplantation (SCOT) prospectively collected database for all HD patients in Saudi Arabia from 1999 until 2010.

Result: The first set of data represents a total of five studies published in 1995 involving 1950 patients. The reported prevalence was between 42-72% with average of 65.3%. Souqiyyeh reported a prevalence of 50% among 6604 patients. SCOT reported a prevalence of 42% on the same year. SCOT data have shown a progressive decline in prevalence from 51% in 1999 to 24.5% in 2010. This decrease was across all regions in the Kingdom as shown.

Conclusion: Since 1995, there is a statistically significant decrease in prevalence of HCV infection among HD patients over the past three decades (P<0.000005). This decrease in prevalence is likely due to strict adherence to Infection Control Universal Precautions guidelines and using dedicated dialysis machines for infected patients with Hepatitis C. This has resulted in much fewer hepatitis C virus serocversion of all new comers to HD units in KSA.

PP-70
Hepatitis B Prophylaxis Post-liver Transplantation with Tenofovir or Entecavir
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Abstract:
Background: Entecavir and tenofovir are the first line therapy for Hepatitis B including cirrhosis due to high barrier for resistance. Both drugs are potent and reported as a rescue therapy to control HBV post-liver transplant. Our aim is to evaluate the safety and efficacy of entecavir and tenofovir in the post liver transplant setting.

Method: Out of 133 liver transplants performed for HBV, 15 patients received entecavir (5) or tenofovir (10) post-liver transplant, demographic data was collected, HBsAg, HBaAg, HBCAb, HBV DNA before transplant and genotype if available, co-infection with HCV, HDV, presence or absence of HCC, type of transplant, pre/post-transplant HBV duration of follow up. We evaluated HBV recurrence (reappearance of HBsAg or HBV DNA), as well as interaction with immunosuppression (rate of rejection) or renal impairment.

Results: Total of 15 patients, 10 males, with mean follow–up of 32 month, all were positive for HBsAg, HBeAg and 13 were HBeAg negative, HBV DNA was undetectable in nine at the time of transplant and positive in six (2 with high viremia). Three out of the 15 patients had HBsAg after liver transplant with only one patient having positive HBV DNA who was on adefovir post–transplantation, and viremia was controlled after switching to entecavir; only one patient have acute cellular rejection. No worsening of renal function related to tenofovir, none of the patients who had entecavir or tenofovir before transplant had recurrence after transplant.

Conclusion: Tenofovir and Entecavir are safe and effective in prophylaxis of post liver transplant with high resistance barrier, no effect on renal function or interaction with immunosuppression. It may provide an attractive alternative to long term HBIG use.
PP-71
Outcome of Pediatric LDLT: A Single Institutional Experience
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Abstract:
Background: Living related liver transplantation (LRLT) is the only available life-saving procedure for children with irreversible liver failure. The aim of the study: was to evaluate the outcome of 32 children who underwent liver transplantation using grafts from living relatives.

Methods: A retrospective single centre assessment of the results of those children as regard to the surgical complications & survival rate from April 2003 to June 2012 at our centre. There were 17 (53.1%) boys & 15 (46.9%) girls with a mean age of 5.85±5.86 years (range 0.6 – 17.5), mean weight 20.3±16.17 kg (range 7.5 - 65).

Results: The main indications for liver transplantation were: biliary atresia (n=13) Byler’s disease, Budd Chiari Syndrome & Cryptogenic liver cirrhosis (n=3 for each) and HCV (n=2). PELD score <12y (n=27) mean (18.44±8.13) range (2-34) and MELD score >12y (n=5) mean (16.2±4.32) range (11-21). GRWR mean (1.97±0.81) range (0.88-3.5). Postoperative complications included: wound infection in 5 patients Biliary leaks & stricture 2 for each), renal impairment & chest infection (3 for each), GIT bleeding in two patients, HAT, PVT, pulmonary embolism & HV outflow obstruction (1 for each). 11 out of 32 children died with a mortality rate of 34.38%. Cause of death was early graft dysfunction (n=3), sepsis & biliary leak with multiple organ failure (2 for each), HAT, HV outflow obstruction, pulmonary embolism & chronic rejection (1 for each).

Conclusion: A satisfying outcome was achieved in most cases with good graft function & survival rate of 65.63%. Successful liver transplantation in a child is usually challenging with many obstacles yet to be overcome requiring all the combined expertise of the pediatric transplant team.

PP-72
Day of Surgery Rejection of Donors in Living Donor Liver Transplantation
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Abstract:
Aim: We aim to study diagnostic laparoscopy as a tool to exclude donors on day of surgery in LDLT.

Materials and Methods: Prospectively collected data of all potential donors in LDLT were analyzed. All the donors were subjected to the donor evaluation protocol at our institution which includes three phases. Between November 2002 and May 2009, Sixty nine potential living donors were assessed by laparotomy for the sake of harvesting of the planned part of the liver without laparoscopic assessment. Between end of May 2009 and October 2010, 30 potential living donors were appraised for 30 recipients. We subjected all of them to laparoscopic assessment of the liver before proceeding to make the abdominal incision for harvesting part of the liver for donation.

Results: A total of 87 LDLT were performed between November 2002 and October 2010. Four donors out of 69 (5.7%) were rejected on the day of surgery after open exploration of the abdomen because the liver was grossly fatty and pale in all four donors. Right hepatectomy was performed in one donor based on the results of liver biopsy despite the fatty gross appearance of the liver. The recipient developed primary non-function of the graft and the donor suffered small for size syndrome. After starting the policy of laparoscopic assessment, 8/30 (26.6%) donors were rejected on basis of laparoscopic findings before opening the abdomen. The results of the liver biopsy in rejected donors are comparable to accepted donors in either era.

Conclusion: Laparoscopic assessment of donors in LDLT is a safe and acceptable procedure. It avoids unnecessary large abdominal incision and increases the chances to achieve donor safety. Key words: Live donor, Laparoscopic assessment, rejected donors, Day of Surgery, fatty liver.
PP-73
Entropy Guided ET Desflurane Concentration during Living Donor Liver Transplant
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Abstract:
Objective: The three phases of liver transplantation procedure represents different liver conditions and hence function. Aim to study the end tidal Desflurane concentration during the three phases of the procedure guided with monitoring the depth of anaesthesia with Entropy.

Methods: After obtaining institutional approval, 40 patients scheduled for LDLT were included in this prospective study. Mean age 45±10.17, mean MELD score was 15.43±3.92. Anesthesia was induced with propofol, fentanyl and rocuronium. Maintained with desflurane-O2-air. Entropy values; state entropy (SE) and response entropy (RE) were kept around 40 to 60. Intermittent intravenous boluses of Fentanyl (1–2 µg/kg) were given if the difference between SE and RE was more than 10 for more than two minutes. Entropy values and end tidal Desflurane concentrations were recorded at 15 minutes intervals during the three stages.

Results: End tidal Desflurane values were significantly lower in the anhepatic phase (2.81±0.4) than the dissection and neohepatic phases (3.33±0.3, 3.47±0.3 respectively, P<0.001 in both) when entropy was fixed between 40 and 60. No significant difference was found between end tidal Desflurane values in dissection and neohepatic phases (p=0.255). There were statistically significant differences in heart rate values during the dissection and anhepatic phases (91.24±7.51 vs 99.18±13.14, p=0.026), and in mean arterial blood pressure between the anhepatic and neohepatic phases (71.5±8.65 vs 77.00±9.24, p=0.040), but the values were within clinically acceptable range.

Conclusion: Inhalational anesthetic requirements differed from one phase to another during LDLT procedure with requirements least during the anhepatic phase. Monitoring anesthesia depth is required to avoid unnecessary administration of excess inhalation anaesthetic agents.

PP-74
The Outcome of Living Donor Liver Transplantation for Hepatocellular Carcinoma
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Abstract:
From 28 April 2003 to the end of May 2012, 176 patients underwent LDLT in the National Liver Institute, Menoufya University. Hepatic focal lesions were the indication of liver transplantation in 54 (30.7%) patients. 48 (88.9%) patients of them had HCC in the pathological study of the explanted liver. According to CT scan, 34 (63%) patients were within Milan criteria, 20 (37%) patients were beyond Milan, 44 (81.5%) patients were within UCSF criteria, and 10 (18.5%) patients were beyond UCSF criteria. Comparing preoperative CT results and post-operative pathological examination there was significant overestimation of numbers of FLs in US and CT scan than pathology by 16.5%, and significant underestimation by 9%. PET scan was done in 26/54 (48.1%) patients, 11/13 patients with negative PET scan for hepatic HCC were positive in histopathology. The accuracy of PET scan in detecting HCC was 60.9%, with sensitivity 47.8%, and specificity 66.7%. Seventeen (35.4%) patients were underwent locoregional ablation therapy before the transplant. Only 3 (17.65%) of these patients are well ablated in the pathology of explanted liver. Eight (16.7%) patients had preoperative chronic benign PVT and underwent thrombectomy during transplantation. Two patients with preoperative PVT had postoperative PVT. No recurrence was detected within this group. Recurrent HCC post transplantation detected in only 4 (8.3%) of the patients. There was significant statistical relation between recurrence of HCC and Child score C, MELD score > 10, AFP > 1000 u/ml, Rt lobe graft, and patient’s weight (p-value < 0.05). There was significant statistical relation in univariate analysis between survival of patients with HCC and preoperative INR, anhepatic phase of operation, blood and plasma transfusion, tumor differentiation and grading, microvascular invasion, and acute graft rejection (p-value < 0.05).
PP-75
Modified Technique in Closure of Bile Duct Stump in Living Donor Hepatectomies
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Abstract:
Introduction: Donor safety is a critical issue in LDLT, biliary complication in living donor hepatectomies (LDH) is still common.

Method: A new modified technique in closure of bile duct stump in LDH by “using interrupted non-absorbable sutures and placing of surgical clip below suture line” aiming to decrease the high biliary leak (BL) rate.

Results: To evaluate the usefulness of the new technique, it was applied for consecutive 50 donor hepatectomies and the outcome as regard BL was compared with the 140 previously performed LDH in whom BL was reported in 26 donor (18.5%). These 140 patients were divided into 2 groups: 1- Group A (n=94) with sump closure using continuous sutures, BL rate was 19.1% (n=18). 2- Group B (n=46) with stump closure using interrupted sutures, BL rate was 12.4% (n=8). The 50 donor with the new technique considered as group C; minimal conservatively treated BL occur in only 4% (n=2). Management of BL in the three groups was studied and compared.

Conclusion: Significant marvelous reduction in BL rate was observed by using the new modified technique in closure of bile duct stump in LDH.

PP-76
Money is a Strong Factor in Who Gets an Organ in Lebanon
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Abstract:
Even though organs cannot be sold or bought, money plays a very important role in how organs are allocated in several countries including Lebanon. Money does not determine who gets a transplant at a particular hospital, but it does determine who is referred for consideration and gains admission to a transplant center. Organ transplant surgery is very expensive, preoperative testing required in order for a patient to be on the waiting list for a transplant can cost a lot of money, even if the patient is not hospitalized. In Lebanon, to be transplanted, a patient must demonstrate the ability to pay the transplant and transplant associated costs. Organ transplantation is not covered by insurance companies and governmental support is very minimal. Given the financial obstacles that poor people face in gaining access to health and transplant services, payment for their body parts suggests exploitation. Unfortunately several organs are wasted every year in Lebanon because of inability to achieve financial coverage. The living donors are another source of organs and this is also ruled by money. Rich patient can buy organs from the poor one who donated their organs to get money. While this may be true, the whole procedure behind organ donating and selling is unfair to the poor. In some countries organ trafficking is very common, and some countries work together to trade organs even over the internet. Since transplantation depends on public humanity to make organs available, it is unethical to ask everyone to donate but to give organs only to those who can pay. While people are paying their taxes, new law should be imposed to make governments cover all the expenses of such procedures, for the reason that people can’t afford organ transplantation doesn’t mean that they should just be left to die.
PP-77
Establishing a New Liver Transplantation Program
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Abstract:
Introduction: Liver transplantation is the gold standard treatment for patients suffering from end stage liver disease. In 2001, a liver transplantation program was commenced at Imam Khomeini Hospital Complex as the second liver transplantation center in Iran and the first one in capital city of Tehran. This study is designed to evaluate the results of our initial experiences with liver transplantation, and show how this program has been developed.

Methods: Ninety nine deceased donor orthotopic liver transplantations were performed between December 2001 and December 2011. Prospectively recorded data of the liver transplant recipients were reviewed retrospectively.

Results: The number of liver transplantations has been gradually increased from 2 to 25 transplants per year. The 1 month, 3 months and 1-year patient survival rates have been increased significantly, as one year patient survival rate improved from 33% to 87% (P value< 0.001). There were no significant differences for age, body mass index, Child and MELD scores among three phases whereas mean cold ischemic time, mean operative time and intraoperative fresh frozen plasma transfusion were decreased significantly.

Conclusion: In our experience, we found some important factors which helped us to develop a new liver transplantation program and improve the outcome. To our knowledge, these factors are managerial coordination of different units and, build up a cooperative multidisciplinary team, passing the possible learning curve, using modified piggy back technique for hepatectomy and caval anastomosis and using a rotational thromboelastometry device for monitoring the patient’s coagulation state.

PP-78
Post LDLT Biliary Complications: Experience from First 150 cases
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Abstract:
Introduction: Living donor liver transplantation (LDLT) is becoming a widespread technique with good results. Biliary complications, however, still occur frequently after liver transplantation and have retained a high risk of significant mortality and morbidity. The aim of this work is to review the biliary complications, its related problems, and its impact on the morbidity and mortality in patients underwent living related liver transplantation.

Methods: The records of 150 patients who underwent LDLT in National Liver Institute (NLI), Menoufiya University, Egypt, from April 2003 to October 2011, were retrospectively revised.

Results: Biliary complications occurred in 34% of recipients and included bile leak in 24% of cases, anastomotic strictures 10% of cases. 30% of cases had biliary leak followed by stricture. The number of biliary anastomoses was directly proportional to biliary complications. Other potential risk variables for biliary complications as type of biliary reconstruction, cold ischemia time, and CMV infection did not affect biliary complications in our study. Endoscopic and radiological intervention management is effective in the majority of cases. Surgical intervention is obligatory in selected cases. Biliary complications related mortality was 12%.

Conclusion Biliary complications are one of the most serious complications following LDLT and should be diagnosed and managed as early as possible to avoid dreadful outcome.
**PP-79**

**Difficulties of LDLT for HCC Patients: Experience from First 150 LDLT cases**

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**Abstract:**

Introduction: Living donor liver transplantation (LDLT) can provide life-saving therapy for many patients with HCC, who otherwise would succumb due to tumor progression. Offering LDLT to patients with HCC, however, raises complex issues for the donor, the recipient, and the medical team.

Methods: The records of HCC cases in the 150 patients who underwent LDLT in National Liver Institute (NLI), Menoufia University, Egypt, from April 2003 to October 2011, were retrospectively revised. The aim is to answer several questions: Should we expand the criteria for liver transplantation for HCC? What is the response to loco-regional therapy and role of tumor down staging? What are the difficulties of evaluation? Is there especial technique considerations? What about the outcome and recurrence?

Results: From the first 150 case of LDLT HCC was the indication of LDLT in 35 (23.3%) of cases. Of the total 35 HCC cases 28 (80 %) was within Milan criteria, 4 (11.4%) cases had benign portal vein thrombosis, 3 (8.5%) cases had recurrent HCC, PET CT done in all HCC two weeks before LT to exclude distant HCC metastases. Porta hepatis first and exploration first was the used technique.

Conclusion: Transplantation is currently the only life-saving therapy for patients with unresectable HCC and cirrhosis. The Milan criteria remain a valid tool to select candidates for LDLT to achieve optimal long-term results. Alpha-fetoprotein of 1000 ng/mL or more should be considered an exclusion criterion for liver transplantation. PET CT might be of particular diagnostic value in detecting distant HCC metastases. Exploration first and non touch techniques are recommended in HCC cases.

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**PP-80**

**Virologic Breakthrough for HBV after LDLT on Entecavir: Case Report**

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**Abstract:**

Introduction: In Egypt, where LDLT is the only available option, most transplanted cases are due to HCV related ESLD or HCC. However, other etiologies co-exist as hepatitis B virus (HBV). Without preventive therapy, HBV recurrence after liver transplantation was common and can lead to graft failure and death. The antiviral regimen should be robust and minimize the risk of breakthrough mutations.

Patients and methods: In the period from March 2008 till April 2012 we transplanted 110 cases of LDLT, three of them were due to HBV related end stage liver disease and/or HCC and two were combined HCV and HBV. According to our protocol all patients were HBV DNA negative before transplant and received intra and post-operative IM anti HBV immunoglobulin and lifelong post transplant nucleotide analogue (Entecavir).

Results: We recorded a single case of virologic breakthrough on Entecavir after 32 months in male patient 45 years who was transplanted for HBV related ESLD and on strict and adherent follow-up on entecavir. Breakthrough was documented pathologically by liver biopsy; unfortunately genetic mutation analysis was not available. Patient was treated by adding Adifovir for two weeks then shifted to Tenofovir when became available in Egyptian market with normalization of liver enzymes and negative HBV DNA PCR up till now (eight months).

Conclusion: Liver transplantation for HBV carries risk of recurrence even with drugs with high genetic barrier. Regular follow up and early detection of breakthrough is mandatory. Rescue therapy is life saving before graft failure.
PP-81
Outcome of 180 Right Hepatectomies for Living Liver Donors - the Learning Curve
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Gastro-Enterology Surgical Centre, Mansoura, Egypt

Abstract:
Background: Liver transplantation offers the only hope for patients with end-stage liver disease. However, this comes at the expense of possible donor injury in living donor liver transplantation. This study aims to evaluate donor outcome after right hepatectomy in our centre and if it is affected by increased experience.

Patients and Methods: Between April 2004 and May 2012, 180 living related donors underwent right hepatectomy. Postoperative complications were classified according to the latest version of Clavien system. Mean period of follow-up was 35.2±25.0 months with a minimum of five months.

Results: 135 were males and 45 were females. The mean age was 28.8±7 years. Mean graft weight was 984±157 g and the mean volume percent of remaining liver was 37.9±7.6%. Intraoperative complications occurred in nine donors. Mean operative time was 374±84 minutes; mean blood loss was 522±419 mL. The mean ICU and hospital stay were 3.9±2.2 and 12.4±8, respectively. A total of 80 complications developed in 57 donors (31.7%). The commonest complication type was biliary complications. There were 35 grade I, 10 grade II, 20 grade IIIa, 13 grade IIIb, one grade IVa and one grade V complications. One donor died due to post-transfusion ARDS on postoperative day 30. The last 60 cases compared to preceding 2 periods, 60 cases each, showed less major complications (p=0.021). On follow-up, no donor developed long lasting disability. A donor died in a road traffic accident one year after donation.

Conclusions: Donor right hepatectomy is not entirely safe procedure. Biliary complications are the commonest after this procedure. Major complications are expected to decrease with time but not minor complications. More long term follow up is needed.

PP-82
Risk Factors of Recurrence of HCV Genotype 4 in Egyptian Patients after LDLT
Mohsen Maher, Maha Hussein, Ahmed El-Shafie, Mohamed Fathi, Mahmoud El-Meteini
Ain Shams University, Cairo, Egypt

Abstract:
Hepatitis C virus (HCV) is the most common indication for liver transplantation worldwide. Recurrence of HCV post transplantation is one of the major challenges which are associated with poor graft and patient survival. The aim of this study was to assess the frequency of clinical HCV genotype 4 recurrence in Egyptian patients who underwent living donor liver transplantation (LDLT) and identify possible factors affecting it. The study was conducted on 122 recipients of LDLT due to HCV genotype four related liver cirrhosis. Clinical HCV recurrence was diagnosed by elevated liver enzymes, increased viral load and confirmed by histopathology of liver biopsy. Several factors related to recipients, donors, operative and postoperative period were analyzed for their relation to recurrence of HCV. Our results showed that the clinical HCV recurrence was diagnosed in 22.7% (28 patients) of LDLT recipients with 75% of them (21 patients) diagnosed in the first year post transplantation. Less graft recipient weight ratio (GRWR) and rejection episodes following surgery were the only factors significantly related to the development of recurrent disease.
PP-83
Study of Complications of Liver Cirrhosis in Relation to the Nutritional Status
Shaimaa Elkholy, Sherif Mogawer, Mona Mansour, Heba El Sheriff
Kasr Alainy, Cairo, Egypt

Abstract:
Background: Protein Energy Malnutrition (PEM) is a salient feature in patients with hepatic dysfunction. It is also an independent risk factor for morbidity and mortality in these patients. Factors that contribute to malnutrition in patients with hepatic failure include altered metabolic rate, fat malabsorption early satiety and impaired gastric emptying, frequent hospitalizations, over dietary restriction and glucose intolerance.

Objective: The aim of work in this study is to assess the nutritional status among a group of Egyptian patients with Child's C liver cirrhosis and also to correlate malnutrition to various complications of liver cirrhosis.

Methods: This study was conducted on 45 cirrhotic patient children with or without complications. The patients were divided into two groups: group I included 30 patients with moderate to severe degree of malnutrition and group II which included 15 patients with mild degree of malnutrition.

Results: Rate of various complications is higher in patients with severe malnutrition, TSFT and MAC has the highest sensitivity 85.71 %,100% & specificity 90 %,60% respectively to rate of complications(p value <0.0001 & area under the ROC curve=0.879).

Conclusion: It concluded that PEM is highly prevalent among patients with liver cirrhosis and it is directly related to the severity of the disease and to the rate of complications. Many tools are used to assess the nutritional status of patients with liver cirrhosis none of them is the gold standard for the nutritional assessment.

PP-84
Metronidazole-Induced Encephalopathy in a Patient with End-Stage Liver Disease
Imran Javed, John Knorr, Neha Sahni, Ceylan Cankurtaran, Jorge Ortiz
Albert Einstein Medical Center, Philadelphia, USA

Abstract:
Purpose: Metronidazole-induced encephalopathy (MIE) has been rarely reported. We report a case of MIE in a patient with end-stage liver disease (ESLD). Out of the 12 published reports of MIE, this is the third case in a patient with ESLD.

Summary: A 63 year-old male with ESLD presented to the emergency department with progressively worsening general fatigue, slurring of speech, aphasia, vomiting and a left sided facial droop after completing a 2-week course of metronidazole for recurrent Clostridium difficile-associated diarrhea. His ESLD was secondary to hepatitis C virus, and he had known hepatic encephalopathy. However, his liver function tests were unchanged from baseline. The patient had completed a first course of metronidazole three weeks prior to presentation. Upon admission, an MRI revealed hyperintense T2 signals involving the bilateral dentate nuclei, the inferior colliculi and the splenium of the corpus callosum, and increased diffusion restriction at the splenium of the corpus callosum, findings suggestive of metronidazole-induced encephalopathy. His neurological function gradually improved, and he underwent deceased donor liver transplantation six days after admission. A follow up MRI six weeks after metronidazole discontinuation revealed complete resolution of MRI abnormalities, however the continued to report persistent parasthesias six months after diagnosis of MIE.

Conclusion: A patient with ESLD and hepatic encephalopathy developed MIE after a relatively short course of metronidazole. Due to reduced hepatic metabolism, metronidazole has been shown to accumulate in patients with ESLD. Increased awareness for potential neurotoxicity when using metronidazole in such patients is warranted, especially in those with potentially confounding hepatic encephalopathy.
PP-85
The Impact of the Anatomical Variation of the Donor’s Liver
Taha Yassein, Mahir Osman, Amr Sadek, Markus Büchler, Ibrahim Marwan
National Liver Institute – Menoufiya University, Menoufiya, Egypt

Abstract:
Background: Living-related liver transplantation (LRLT) has become an excellent treatment method for patients with end-stage liver disease. The anatomical variation is the cornerstone for donor and recipient safety. Aim of the work: to evaluate the impact of the anatomical variations of the donor’s liver on the procedure of living related liver transplantation.

Methods: Forty five donors were included in our study from two centers; National Liver Institute, Menoufiya University-Egypt & Surgical Clinic-Heidelberg University-Germany. We analyzed the anatomical variations of the donors and its impact on both donors and recipients.

Results: According to the liver anatomical variations of the donor and its impact on the procedure, the biliary anatomy had the highest percentage of variation with impact followed by hepatic vein and hepatic artery but without impact on the donors while the portal vein had the lowest percentage of variation but with impact on the donors.

Conclusions: There were correlation between the recipient morbidity and mortality and anatomical variation of the donor.

PP-86
CT Volumetry: Is it an Efficient Tool for Predicting LDLT Graft Weight & Volume?
M. Ghazaly, Mohamed Taha Badawy, H.E.-S. Soliman, M. El-Gendy and T. Ibrahim
National Liver Institute, Shibin El Kom, Egypt

Abstract:
Introduction: CT images allow determination of the volume of liver tissue required by the recipient and the volume remaining with the donor. Objective: determine accuracy of CT volumetry for estimation of right lobe weight in LDLT by comparing it with intraoperative findings.

Materials and methods: This is a prospective and retrospective study conducted in two centers: Forty cases of LDLT, in National Liver Institute, Menoufiya, Egypt from January 2009 to January 2011. The results were analyzed in Liver Transplant Department, Royal Free Hospital, University College London. Forty cases had a contrast enhanced CT abdomen with volumetric study for the donor. The intraoperative graft weight was measured.

Results: Mean of Calculated wt. of graft = 952.35, mean of Actual graft wt = 871.25 with no significant difference. 32 cases out of 40, the calculated weight of the graft is almost the same as or even greater than the actual one, we can also ensure adequacy of the graft for the recipient provided that all GRWR > 0.8, in our series it ranged from 0.84 to 1.9 (mean 1.09525 ± 0.21). In eight cases the actual graft weight is more than the calculated one, the percentile difference between both for such cases ranged from (0.53 to 16.66 %) with a median of 1.615 and only two cases (5%) were out of the range (15.78, 16.66). This was also confirmed by comparing the medians of the calculated GRWR and the actual GRWR (which were 1.1, 1.09 respectively) with no significant difference at all.

Conclusion: Our results demonstrate that the CT Volumetry is an efficient and a reliable tool for assessing LDLT graft weight and volume prediction.
PP-87
Outflow Reconstruction in Adult LDLT; Taking Rt lobe graft without the MHV
M. Ghazaly, Mohamad Taha Badawy, H.E.-D.Soliman, M. El-Gendy and T. Ibrahim
National Liver Institute, Shbin Elkom, Egypt

Abstract:
Introduction: The inclusion of the MHV or not should be based on sound criteria to provide adequate functional liver mass for the recipient, and a minimum risk to the donor. Objective: To investigate the safety of different modalities of venous outflow reconstruction in right lobe LDLT grafts without MHV.

Materials and methods: Forty cases underwent Rt lobe LDLT without MHV; Group A (Venous Outflow Reconstruction patients with more than one HV anast.) (n=16), Group B (Patients with single HV anast.) (n=24) Both groups were compared regarding: indications for reconstruction, complications, and operative details. Besides, describing different modalities used for venous outflow reconstruction.

Results: Forty cases underwent LDLT without MHV (with the exception of two cases). 24 cases had single RHV anastomosis, 16 cases had more than one hepatic vein, 16 cases out of them had two vein anastomosis. Out of these 16 cases, there were six cases who had different modalities of vein grafts and venoplasty. There was a significant increase in cold ischemia, warm ischemia time, and hepatic venous anastomosis time in Group A than in Group B; with means of 68.75, 57.875, 34.68 versus 51.25, 43.33, and 17.70 respectively. When the comparison came to the complications and outcomes in terms of laboratory findings (total Bilirubin on three days levels and one month levels), overall hospital stay, three months survival and one year survival there were not significant differences between both groups.

Conclusion: In our institute, we believe that Adult LDLT is safely achieved with better outcome to the recipients and donors as well by harvesting the right lobe graft without MHV, provided that significant MHV tributaries (segments V, VIII more than 5mm) are reconstructed, and any accessory considerable inferior right hepatic veins or superficial RHVs are anastomosed.

PP-88
Biliary Complications after LDLT
Tarek Salah, Mohamed El-Shoubary, Mohamed Abdel Wahab, Ahmed Mohamed Soltan
Gastroenterology Surgical Center, Mansoura, Egypt

Abstract:
Introduction: Biliary complications remain a major problem despite all surgical and advances in the field of liver transplantation. Reports in recent literature indicate that biliary complications in adult living donor liver recipients range from 14% to 46 %. Biliary leaks are more common than strictures in living donor. Aim: To present our experience in adult LDLT and incidence of biliary complications in both recipients and donors and their management.

Patients and methods: From May 2004 to October 2011, we have 150 patients who underwent LDLT. We have 64 right lobe graft with single bile duct, 78 grafts with two bile ducts and 8 grafts with triple orifices. We have done 78 single biliary anastomosis, 67 double anastomosis and 4 triple anastomosis and one Hepatico-jejunostomy. Extrahepatic dissection and division of the right hepatic duct was done in first 109 donors while intrahepatic dissection after parenchymal resection was done in last 41 cases.

Results: Biliary complications occurred in 35 recipients (23.3%), 28 cases of biliary stricture. Seven cases of only bile leak. The incidence of complication was significantly affected with the number of bile ducts and extrahepatic versus intrahepatic resection of bile ducts. Twenty three cases underwent endoscopic balloon dilatation and stenting in 14 cases and bilioenteric anastomosis in nine cases. Biliary leak occurred in 17 donors from where four donors only underwent endoscopic stent in three and surgical exploration in one. Four cases of our recipient mortality resulted from uncontrolled biliary sepsis.

Conclusion: Biliary complications are the most common and important surgical problems after LDLT. Biliary complications are related to the number of lumens on the graft surface and technique of resection. Endoscopic treatment is useful and should be attempted first. Surgical reconstruction is done when endoscopic treatment failed.
PP-89
Experience of Living Donor Liver Transplantation for Hepatocellular Carcinoma
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Abstract:
Introduction: Liver transplantation for HCC was a controversial issue. It offers a potential for cure of both cirrhosis and HCC. Living donor liver transplantation expands the limitations for HCC.

Methods: From January 2005 – April 2012, 51 patients with HCC underwent LDLT at the Gastroenterology Center, Mansoura University out of 170 patients in the same period. The mean age 50.3 ± 5.5 Ys, 49 male, 2 females. HCV was the cause of cirrhosis in 47 Pt. Mean waiting time 119 ± 84 day (R=11–369 ) MELD score 18 ± 4.6, right lobe 44, left lobe 2, Both lobe 5. size of the tumour < 5 cm 34 cases ( R=1–12.5 cm ) SD 2.8. No vascular invasion in 34Pt, and 16 Pt with vascular invasion. Child “B” & C pt 21, 22 respectively. & fetoprotein level 124 ± 281 all are related except 7. RT lobe without MHV was used in all cases.

Results: Mortality in recipient 14 pt (27.5%), recurrent HCC in 7 pt (13.7%). Overall survival at 66 M was 66%. Postoperative complications include, rejection in 7 pt, recurrent HCV 5 pt, biliary complications 5pt, NO MORTALITY in the donor. 80% passed without post operative complication & in 20% minor complication managed conservatively.

Conclusion: Living donor liver transplantation for HCC is a good therapeutic option with good survival and low recurrence rate although some cases are out of Milan criteria.

PP-90
Improvement of Mice Liver Infected with Schistosomiasis after Stem Cell Therapy
Wafaa Mansour, Magda El-Mahdy, Tagreed Hasan, Noha Mehana, Ibrahim Rabia
Theodor Billharz Research Institute (TBRI), Giza, Egypt

Abstract:
Liver fibrosis due to different diseases including schistosomiasis leads to cirrhosis and finally liver malignancy. The technique of hepatocyte transplantation has recently improved in order to bridge the time between whole-organ liver transplantation. In the present study, mice stem cells were isolated from bone marrow cells (BMSCs) harvested from the tibia and femoral marrow compartments of male Balb/c mice, then cultured in Dulbecco’s Modified Eagle’s medium (DMEM) with hepatocyte growth factor for 24 hours in a 37o C, 5% CO2 incubator, then transplanted into Schistosoma mansoni–infected Balb/c female mice on their 12th week post-infection via tail injection. One month after bone marrow transplantation, mice were sacrificed every one month until third month and serum was collected at each sacrifice, then ALT, AST and hydroxyproline in serum were assayed. Also, granuloma size was measured for identification of liver fibrosis. BMSCs were shown to differentiate into hepatocyte–like tissue after hepatocyte growth factor treatment in vitro.

Results: Serum ALT, AST and hydroxyproline were markedly reduced than in the BM-untreated control group. Also, granuloma size showed a marked decrease in size compared to the BMSCs untreated Schistosoma infected group.

In conclusion, BMSCs transplantation into Schistosoma mansoni infected experimental Balb/c mice, can restore liver function and can reduce liver fibrosis. The curative action of stem cells would be considered a potential strategy for future liver treatment, including malignant liver.
Impact of Recipient Co-morbid Factors on Outcome of LDLTx
Osama Hegazi, Abou El-Ella K, Tajeddin A, and Abdeldaim H
National Liver Institute, Menoufeya University, Giza, Egypt

Abstract:
Background: In recipients of LTx, associated risks and comorbid factors were believed to affect the outcome of liver transplantation adversely. The aim of the present study was to evaluate the influence of these co-morbid factors on immediate outcome after liver transplantation.

Methods: We retrospectively evaluated the records of 116 LDLT recipients at our center from April 2003 to March 2011.

Results: The commonest co-morbid factor is DM (n=27), renal disease (n=20), cardiac disease (n=18), previous abdominal surgery & pulmonary disease 15 patients for each, obesity (n=12), hypertension (n=10), and preexisting PVT (n=6). Presence of co-morbid factors associated with slight increased PRC transfusion, but not associated with increased length of stay (LOS) in ICU and hospital. Postoperative PVT found in 3 (4.1%) patients, there was significant correlation with preexisting PVT. Biliary complications (BC) developed in 29 (39.2%) patients. There was significant increased BC in diabetic patients. Postoperative bacterial infection (PBI) found in 42 (61.9%) patients, without significant correlation to the co-morbid factors. Postoperative mortality occurred in 20 (27%) patients, seven were hypertensive, and 12 were diabetic. Cases of the study population were further subdivided in to three categories according to the number of associated co-morbidities. Cases with one co-morbid factor (G1) 27 patients, cases with two co-morbid factors (G2) 26 patients, and cases with more than two co-morbid factor (G3) 21 patients. Mortality was significantly increased in patient with multiple co-morbid factors.

Conclusion: Presence of co-morbid factors such as hypertension, diabetes mellitus, cardiac disease, and renal disease found to increase postoperative morbidity, but did exclude the patient from liver transplantation. Patients with multiple co-morbid factors require special consideration since peri-operative mortality is significantly higher.
PP-92
Should we Correct Sever Thrombocytopenia Perioperatively?
Nirmeen A Fayed, Ayat A Roshdy, Magdy K Khalil
National Liver Institute, Shebeen Alkoom, Egypt

Abstract:
Introduction: Platelet transfusion is associated with decreased survival. This study answers whether perioperative prophylactic correction of severe thrombocytopenia is indicated during liver transplantation.

Methods: Two groups of recipients GI (n=57) platelet count (PC) < 50x10^9/L and GII PC > 50x10^9/L (n=61) compared regarding blood loss, blood transfusion, % of blood loss surgery, postoperative bleeding, duration of mechanical ventilation and ICU stay. Course of PC was followed for 14 days. Same transfusion triggers used.

Results: PC of GI was (40.47 ± 10) x10^9/L with lowest value of 20 x10^9/L and of GII was (90.25± 44.87) with highest value of 265x10^9/L. Comparison of preoperative fibrinogen, INR, MELD, surgery duration, GBWR was insignificant. HB was significantly higher in GII (11.48+1.17 VS.10.76+1.65) gm/dl Comparison of blood loss, PRBCS, cryoprecipitate, and FFPs, was insignificant. % of blood loss surgery was significantly higher in GII (49.2% vs 31.6%). Platelets increased after start of surgery and continue to be higher than preoperative before/after reperfusion. It started to decrease at end of surgery and continue to decline postoperatively with nadir at POD5 (28±6 in GI vs. 38±10 in GII) It increased on POD7 and continues increase on POD 14 (86±10 in GI vs 126±39 in GII). Three cases in G I and 1 case in G II received platelets postoperatively. 1: case of hepatic artery thrombosis in GI on POD 10 and 2 cases in GII on POD 7 and 14. 2: cases explored for post operative bleeding one in each group. Postoperative mechanical ventilation and ICU stay were insignificant.

Conclusion unless indicated by simultaneous clinical and hemostatic tests evaluation, perioperative prophylactic platelet transfusion with 20< platelet count < 50X10^9/L is not recommended.

PP-93
Can Rotem Predict Transfusion Requirement during Liver Transplantation?
Nirmeen A Fayed, Khaled A Yassen
National Liver Institute, Shebeen Alkoom, Egypt

Abstract:
Background: Prediction of blood products requirement during liver transplantation (LT) improves perioperative management. This study evaluated Rotem as predictor of transfusion requirements.

Patients/methods: Relationship between Preoperative Rotem of 100 recipients and intraoperative blood products requirements was prospectively examined by univariate and multiple linear regression analysis. When a continuous variable was an independent predictor, cut values were determined. Same transfusion triggers used for all patients.

Results: 33% of the cases didn't receive PRBCs with mean requirement (4.24±3.5), 38% didn't receive FFPs with mean requirement (4.62±4.47) units, 88% didn't receive platelet transfusion with mean requirement (1.8 ± 5.15) units and 64% didn't receive cryoprecipitate with mean (3.6 ± 5.34) units. Mean blood loss (3270±1085.76ml). Univariate analysis confirmed significant associations between blood transfusion and ROTEIM. The independent predictors using multivariate analysis and their (cut off, sensitivity% specificity%, AUC) are as follows: EXTEM CT (62 sec,80, 64,0.74), MCF (44mm,100,71,0.87)and INTEM CT (155sec, .80,54,0.75), CFT (205sec,72,73,0.75), MCF (45 mm,100,72,0.82 ) for PRBCs. EXTEM CT(67sec,77,58,0.74), CFT(223sec,84,79,0.9 ), and fibtem MCF(9.5mm, 84,74,0.81) for plasma. EX CFT (238sec, 78,56,0.74), MCF(37mm,90,53,0.78 ) and INTEM CFT(205, 77, 47,0.72),MCF(38mm,87,64,0.8 ) and FIBTEM MCF(8.5mm,81,83,0.84 ) for cryoprecipitate and MCF of EXTEM (37 mm,74,63,0.73 ) and INTEM (39mm,74,83,0.82 ) for platelet.

Conclusion: Preoperative Rotem study may be a good predictor of transfusion requirement during LT.
PP-94
Nutritional Aspects of Liver Transplantation
Amr M. Yassen
Mansoura University, Mansoura, Egypt

Abstract:
Liver transplantation is a well-established line of treatment of end stage liver disease regardless the etiology. Terminal cirrhosis with decompensated liver functions represents the majority of transplanted cases. Cirrhosis inflicts a major negative impact on patient’s nutritional status due to disturbed appetite, satiety, digestion, metabolism and absorption. Malnutrition seriously affects the transplantation outcome. Consequently, precise assessment of nutritional status and tailored nutritional plan are very essential to reduce the incidence of morbidity and mortality. Meanwhile, pathophysiological changes in terminal cirrhosis render assessing the patient nutrition status a tricky and difficult task. Both morbidity and mortality are increased proportionally to the pre-operative nutritional status. Several nutritional interventions can be adopted during the per-operative period to ameliorate the negative effects of the nutritional disturbance on the operative outcome. Precise adjustment of the caloric intake, type and amount of protein supplementation may be of utmost value in this regard. Immunonutrition is gaining popularity nowadays as a possible mode for prevention and amelioration of septic complications after major operation. Liver transplant recipients are among the groups that are expected to gain benefit from this therapeutic modality.

PP-95
Decision-making in Liver Transplantation
Amr M. Yassen
Mansoura University, Mansoura, Egypt

Abstract:
Living donor liver transplantation is a complex procedure with an appreciably high degree of risk to recipients and possibly to donors also. This risk justifies a very high degree of credibility in the process of decision making during this procedure. Different phases during transplantation journey inherently require justifiable decisions to be made. Pre-operatively, the decision of patient suitability for such a procedure from different perspectives, like nutritional status or cardiopulmonary profile will significantly affect the transplantation outcome. Intra operative course of recipient operation is sometimes stormy. Even if not, end stage liver disease, long intra-operative period, significant hemodynamic swinging and voluminous blood loss and fluid transfusion mandates rapid and correct decisions to be made all through the procedure to ensure a safe operative course. One of the most critical issues to be covered during this phase is the fluid management that can affect harm on both operative and post-operative outcome if inappropriately handled. The etiology of immediate post-liver transplant bleeding may be confusing, particularly with difficult intra-operative course and voluminous blood transfusion. Whether the source of bleeding is of medical or surgical nature, and consequently, the mode of control, can extensively affect the patient and graft outcome.
PP-96
Role of Color Doppler in Monitoring the Graft Hemodynamics after LDLT
Omar Abdelaziz and Hussein Atteia
Cairo University Hospitals, Cairo, Egypt

Abstract:
Purpose: To clarify the hemodynamics of liver grafts after living donor liver transplantation and to investigate the clinical repercussions of the high portal flow and high resistance arterial flow in the early postoperative period.
Materials and methods: A prospective study on 30 consecutive recipients who underwent liver transplantation in Dar Al-Foad Hospital from January 2007 to March 2008. The hemodynamics of the hepatic artery, portal vein, and hepatic veins were studied for one year. We compared the mean of the different Doppler parameters after excluding cases that developed vascular complications.
Results: There was intraoperative increase in the mean hepatic artery systolic velocity (96.3 cm/sec + 65) and the resistivity index (0.78 + 0.091) and the portal vein velocity (99.6 cm/sec+ 48) which started to normalize after two weeks. Comparing the mean portal vein velocities, hepatic artery systolic velocities and resistivity indices showed an overall significance P<0.0001, P=0.0396 and P=0.002 respectively. We studied the hemodynamics during episodes of acute rejection and after HCV recurrence, however, the results were statistically insignificant except the changes in the hepatic veins pattern (P=0.004) in acute rejection.
Conclusion: The results agree with hepatic buffer response theory in which an early increase in the portal flow and in the hepatic artery resistive indices is a common but transient finding. In this phenomenon has not been associated with deterioration in the clinical course or decreased graft and patient survival.

PP-97
Our First Two Case of ABO-Incompatible Living Related Liver Transplantation in Children
Mohammed Shagrani, Martin Burdelski, Dieter Broering
King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia

Abstract:
The number of children waiting for liver transplantation without having a suitable donor is increasing. Actually, more than 20 children at KFSH are in our institution. Some have already died. In order to overcome this problem, split liver transplantation from deceased donors has been performed. However, the number of such high quality donor organ is very limited. A second option would be to perform ABO-Incompatible transplantation in those children, where only an ABO-incompatible liver donor is available. The National Registry Analysis of UNOS data for ABO-incompatible liver transplantation showed especially in infants and children aged up to 17 years no difference with regard to graft and patient survival if compared with matched donors. A similar experience has been observed in Atlanta, USA, where 16 children have been transplanted across blood group barriers with good success. We are here presenting our first two cases with ABO-incompatible LRLT in children with good success without the need for Plasma pharesis, IV immunoglobulin or IV Rituximab. Only modified immunosuppression protocols was enough to manage those two children with strict follow up and tracing for any sign of hemolysis. Since kidney transplantation in adults across blood group barrier has been performed successfully in our centre, so the necessary predispositions in blood bank and pathology are given.
**PP-98**

**Diabetes Mellitus and Immunosuppressives Risk Factors in Development of Post Liver Transplantation Renal Impairment**

Yasser Kamel, Ayman Assad, Khalil Alawy, Naglaa Allam, Hatem Khalaf, Mohamed Al-Sebayel, Mohamed Al-Sofayan, Mohamed Al-Saghier

King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia

**Abstract:**

Background: Post transplantation renal impairment (PTRE) is one of the frequently occurring complications post liver transplantation with multifactorial etiology. Saudi population has a very high prevalence of diabetes mellitus (24%). It is likely to have an extra important role in the etiology of PTRE in this country more than others.

Aim: To study diabetes and immunosuppressive (IS) regimen as risk factors for PTRE in diabetic post liver transplant patients in Saudi liver transplant program. Methods: a retrospective analysis of 51 adult patients underwent liver transplantation in between January 2003 and February 2006 with no pre-transplantation organic renal disease. The following variables has been studied during and at the end of one year post transplantation: development of PTRE, presence of diabetes pre transplantation (Pre Tx DM), development of diabetes post transplantation (Post Tx DM), immunosuppressive (IS) regimen received either tacrulimus (FK), or cyclosporine (CSA), and average serum level of IS in the three months before development of renal impairment.

Results: Post Transplantation diabetes mellitus is a definite risk factor for PTRE 33 (64.7%) (P=0.033), while Pre Tx DM 18 (35.29%) was not (P=0.887) 40 (78.43%) were on FK and 11 (21.56%) on CSA with no difference between the impact of both on PTRE (P=0.233) neither their serum level P=0.615.

Conclusion: These results confirmed the role of DM specially Pre Tx DM as a risk factor for the development of PTRE while there was no significant role of FK and CSA nor their serum levels in the development of PTRE in diabetics.

**PP-99**

**Pediatric Liver Transplant; KFSH&RC Organ Transplant Center Experience**

Talal Algoufi, M. Shagrani, M. Burdelski, D. Broering

King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia

**Abstract:**

Background: Liver transplantation is well-established worldwide as an effective treatment for end-stage liver disease and various metabolic diseases in children. AIM: To report our experience with pediatric liver transplantation.

Materials & Methods: Review of 60 consecutive children underwent liver transplantation procedures during the period of January 2011 - November 2012. Biliary atresia was the commonest indication (n = 20), Progressive Familial Intrahepatic Cholestasis (n = 16), Cryptogenic Cirrhosis (n = 10), Undiagnosed Cholestasis (n = 9) , Urea Cycle Defect (n= 3), Hyperoxalosis (n = 3), Wilson Disease (n = 1), Congenital Hepatic Fibrosis (n = 1), Hepatoblastoma (n = 1) and Retransplant (n = 2). 59 children had living donor transplants and one received split liver. 2 underwent retransplant because of hepatic artery thrombosis and primary non-function. Majority of the donors are patient fathers. Two deceased because of graft unrelated causes.

Conclusions: Significant number of pediatric patients underwent liver transplantation as cryptogenic cirrhosis and undiagnosed cholestatic syndromes. This warrants extended genetic as well as metabolic work-up for such patients.
Azzam Kayasseh
Dr. Kayasseh Medical Clinic, Dubai, UAE

Abstract:
Dr. Kayasseh Pre- and Post- L.T. Care Program, One of the Bridges to L.T. in our region, I have one success case (DDLT done in U.K.) and I am working on the 2nd one (LDLT will be done in India). Each candidate had been seen (or reviewed his or her reports) by a multi-disciplinary group of consultants inside U.A.E. (guided by me), and outside U.A.E., L.T. Centers, which I have affiliated to it. Each member of the consultant group interviews patients or his (her) reports and offers suggestions from their unique perspective concerning any pre-transplant concerns or post-op management issues that may affect the outcome form liver transplantation (which will be done outside U.A.E.). This communication is integral in formulating an overall plan of management for Pre-and Post- transplant donors and recipients. Pre-Transplant Care and management: Radiologic and laboratory investigations are performed to elucidate the cause and nature of their liver disease, assess functional capacity, determine patency of hepatic vascular supply, and to exclude co-existing medical conditions that would compromise patient or graft survival. Patients may require therapeutic, as well as, diagnostic measures to improve their clinical and functional status. Pre-transplant patients are educated about and provided with information regarding: The normal functions of the liver Common symptoms of liver disease Dietary issues Organ Donation Process The Surgical Procedure Medications post-transplant Post-transplant follow-up Outpatient Post-Transplant Care and Management: Post-transplant patients are educated about and provided with information regarding: Infection and Rejection Dietary issues Vital sign monitoring Medications and side effects Care of the wound Liver biopsy indications and protocols Hygiene and Dental Care Activity and Exercise The frequency of clinic visits in my clinic are as follows: My current protocol for laboratory testing is: 3–6 months post-transplant – labs every two weeks, after 6 months – labs every month. To do a comprehensive review of laboratory data and diagnostic studies reflective of liver function, manage the immunosuppressive regimen that each patient is following, and monitor for recurrence of viral hepatitis.
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