Under the Patronage of
His Excellency Professor Salah Mawajdeh
Minister of Health

The Third Pan Arab Liver Transplantation Congress

The Official Congress of the Pan Arab Liver Transplantation Society (PALTS)

12 – 13 March 2008

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The Third Pan Arab Liver Transplantation Congress

Tuesday, 11 March 2008: Post Graduate Course

Venue: Jordan Hospital Main Auditorium

Chairs: Salam Daradkeh, Muaweih Ababneh

14:00 – 14:30	**Biliary Complications of Liver Transplant** *Mazen Abu Awwad, USA*
14:30 – 15:00	**Management of ascites and renal failure in the patient awaiting liver transplant** *Thomas Boyer, USA*
15:30 – 16:00	**Living Donor Liver Transplantation in Children** *Eduardo Carone, Brazil*
16:00 – 16:30	**Coffee Break**

Chairs: Mohammad Amer Khatib, Salah Halasa

16:30 – 17:00	**Transfer of Experience and Analysis of the Effect of Learning Curve in Adult-to-Adult Living Donor Liver** *Olivier Boillot, France*
17:00 – 17:30	**When Should We Perform a Liver Transplant? – And When Should We Not?** *Goran Klintmalm, USA*

Day 1: Wednesday, 12 March 2008

07:30 – 08:00 **Registration**

08:00 – 10:10 **Reporting Session: Liver Transplantation in the Arab World**

Chairs: Abdalla Al Bashir, Mohammed Al-Sebayel, Ibrahim Mostafa

08.00 – 08.10 King Hussein Medical Center, Royal Medical Services, Jordan
Abdel Aziz Ziadat

08:10 – 08:20 Jordan Hospital, Jordan
Sa'eb Hammoudi

08:20 – 08:30 King Faisal Specialist Hospital and Research Center, KSA
Mohammed Al-Sebayel

08:30 – 08:40 King Fahad National Guard Hospital, KSA
Khaled Abdullah

08:40 – 08:50 Military Hospital, KSA
Atef Al-Bassas

08:50 – 09:00 Wady El Neel Hospital, Egypt
Mahmoud El-Meteini

09:00 - 09:10 Dar Al-Fouad Hospital, Egypt
Waheed Doss

09:10 – 09:20 National Liver Institute, Egypt
Ibrahim Marwan

09:20 – 09:30 Mansoura University Hospital, Egypt
Omar Fathy

09:30 – 09:40 Liver Transplantation in Lebanon, Lebanon
Mahmoud Khalifeh

09:40 – 09:50	Liver Transplantation in Algeria, Algeria *Kamel Bentabak*
09:50 – 10:00	Liver Transplantation in Tunisia, Tunisia *Tahar Khalfallah*
10:00 – 10:10	Liver Transplantation in Sheikh Khalifah Medical City, UAE *Abrar Khan*
10:10 – 10:30	**Coffee Break**
10:30 – 12:00	**Plenary Session I**

Chairs: Ali Obeidat, Hatem Khalaf, Amr Abd-El Aal

10:30 – 10:50	Treatment of Hepatitis C in Patients with Advanced Liver Disease *Ala Toukan, Jordan*
10:50 – 11:10	Critical Aspects of Anesthesia for Liver Transplant *Michael A. E. Ramsay, USA*
11:10 – 11.30	Viral Hepatitis in the Middle East and the Burden of the Disease *Faleh Z. AlFaleh, KSA*
11:30 – 12:00	Surgical Issues and Techniques in Liver Transplantation *Mehmet Haberal, Turkey*
12:00 – 14:00	**Industry Symposium Sponsored by Hikma Pharmaceuticals**

Chairs: Anwar Jarrad, Ayman Abdo, Ibrahim Marwan

12:00 – 12:30	Optimal Immunosuppression for Liver Transplantation and the Use of Prograf *Goran B. Klintmalm, USA*
12:30 – 12:50	Specific Aspects of Immunosuppression in Liver Transplantation *Hans J. Schlitt, Germany*
12:50 – 13:10	Immunosuppression Shift; When & Why *Ibrahim Mostafa, Egypt*

13:20 – 14:00 **Lunch Break Sponsored by Hikma Pharmaceuticals**

14:00 – 15:20 **Free papers**

Chairs: Abdel Aziz Ziadat, Atef Al-Bassas, Waheed Doss

14:00 – 14:10 Endoscopic Treatment of Biliary Strictures Post Living Donor Liver Transplant

Anwar Jarrad, Abdalla Al Bashir, Muaweih Ababneh, Sa'eb Hammoudi, Refa'at Shehab, Hani Abu Ghosh

Jordan

14:10 – 14:20 Endoscopic Management of Biliary Complications in Living Donor Liver Transplantation: Results from Single Center

Ibrahim Mostafa, Rasha Refay , Wael Safwat, Medhat Abd-El Aal , Mahmoud El Meteni, Alaa Hamza, Mohamed Fathy, Amr Abd -El Aal, Mohamed Bahaa, Hesham Abdel Kader

Egypt

14:20 – 14:30 Incidence, Pattern and Impact of Infectious Problems Following Living Donor Liver Transplantation

Ashraf O Abdelaziz, Amany A El kholy, Mostafa MR, Kalil AK, Nashaat MS, Ayman Yosry, Wahid Doss, Gamal Esmat, Magdy El-Serafy, Ahmed El-Tawil Ahmed Ghaly, Adel Hosny, Sami Rifaat, Hatem El-Gabaly, Kiouchi Tanak,

Egypt

14:30 – 14:40 HCV Recurrence in Adult Living Related Liver Transplantation (LRLT): Results from Single Center

Ibrahim Mostafa, Rasha Refay, Wael Safwat, Medhat Abd-El Aal, Mahmoud El Meteni, Alaa Hamza, Mohamed Fathy, Amr Abd-El Aal, Mohamed Bahaa, Hesham Abdel Kader, Magda Al Monayeri

Egypt

14:40 – 14:50 Recurrence of HCV (Genotype 4) Post Living Donor Liver Transplantation for Egyptian Patients

Yosry A, Doss W, Esmat G, El-Serafi M, Omar A, Hosny A, Marawan I, Refaat R, Hatata Y, Ghali A, Sabry H, Kamel S, Ismail T, Said M, Gabali H, Tanaka K

Egypt

14:50 – 15:00 Recepients Complications of the Living Donor Liver Transplantation Progamme in King Hussein Medical Center

Khaled Ajarma MD, Salah Halasa MD, Sameer Smadi MD, Sahm Qsous MD. Haifa Shnalkar RN, Raeda Abu Mekhleb RN, Abdel Aziz Ziadat MD.

Jordan

15:00 – 15:10 Management and Outcome of Biliary Complications after Living Donor Liver Transplantation

Khalil Alawi, Hatem Khalaf, Hamad Al-Suhaibani, Mohamed Al-Saghier, Mohamed Al-Sofayan, Hamad Al-Bahili, Yaser Kamel, Nagla Allam, Mohammed Al-Sebayel

KSA

15:10 – 15:20 Prevention of Hepatitis B Recurrence Post Liver Transplant: Use of IM HBIG

Anwar Jarrad, Abdalla Al Bashir, Muaweih Ababneh, Sa'eb Hammoudi, Refa'at Shehab, Hani Abu Ghosh

Jordan

15:50 – 16:50 Plenary Session II

Chairs: Abdel Hadi Breizat, Khalid Abdullah, Omar Fathy

15:50 – 16:10 Vascular Complications of Liver Transplant

Mazen K Abu Awad, USA

16:10 – 16:30 Biliary Complications of Liver Transplant and the Role of Endoscopic Therapy

Walid Obeidat, Jordan

16:30 – 16:50 Infectious Disease Complications in Transplanted Patients

Muntaser Bilbisi, Jordan

17:00 – 19:00	**Opening Ceremony**
	National Anthem
	Recital from the Holy Quran
	Professor Ibrahim Mostafa, Secretary of the Pan Arab Liver Transplantation Society
	Professor Abdalla Al Bashir, Congress President
	Professor Mohammed Al Sebayel, President, Pan Arab Liver Transplantation Society
	Miss Farida Younan, President, Middle East Transplant Coordinator Organization (METCO)
	Professor Medhat Sabet, Secretary General, Pan Arab Society of Surgeons
	Professor Zuheir Abu Fares, President, Jordanian Medical Association
	His Excellency Professor Salah Mawajdeh, Minister of Health, Hashemite Kingdom of Jordan – Congress Patron
	Recognition of Liver Donors
	Official Opening of the Medical Exhibition followed by a Reception Sponsored Development Medical Supplies Co. Ltd.
20:00	Gala Dinner hosted by Hikma Pharmaceuticals at the Movenpick Hotel, Dead Sea
	Recognition of Key Contributors

Day 2: Thursday, 13 March 2008

08:00 – 10:00 **Free Papers**

Chairs: Faleh Al Faleh, Feras Zreikat, Ayman Yosry

08:00 – 08:10 Surgical Management of Biliary Complications Following Living Donor Liver Transplantation

Hatem Khalaf, Khalil Alawi, Hamad Al-Bahili, Mohamed Al-Sofayan, Mohamed Al-Saghier, Yasser Kamel, Naglaa Allam, Ayman Abdo, Hamad Al-Suhaibani, Mohamed Al-Sebayel

KSA

08:10 – 08:20 A New Surgical Technique for Reconstruction of the Middle Hepatic Vein and its Tributaries in Adult LDLT

Yasser Hatata, A Hosny, I Marwan, O Elmalt, R Kamel, A Yosry,

G Esmat A Omar, M Elserafi, W Doss, S Refaat, H Attia, K Tanaka

Egypt

08:20 – 08:30 Biliary Reconstruction and Complications Encountered in 23 Living Donor Liver Transplantation

K. Bentabak, K. Boudjema, A. Smail, N. Kheidri, B. Griène, N. Debzi, S.A. Faraoun, J.M. Bodin, M. Lakehal, A. Graba

Algeria

08:30 – 08:40 Outcome of Donors in Living Related Liver Transplantation: Experience at the Royal Medical Services

Salah Halasa, Imad Ghazzawi, Sahim Qusouss, S Smadi, K Ajarmeh, Y Yuzar, Haifa Abu Jassar, Faten Sahawneh

Jordan

08:40 – 08:50 Highlights in Anesthetic Management in Liver Transplant (Recipient & Donor) in KHMC

Ali Obeidat, Hayel- Gharaibeh, Ashraf Fadel

Jordan

08:50 – 09:00 Simultaneous Combined Liver and Kidney Transplantation

Sameer Smadi, A Zyadat, S Halasa, I Ghazzawi, S Al-Qusous, A Edwan, M Ghatashah, K Ajarmeh, Ali Obeidat, W Obeidat, Y Yuzar, Y Tokat, Basma Zoubi, Kafa Qaisi

Jordan

09:00 – 09:10	The Role of Mild Hypothermia in Protection Against Ischemia/ Reperfusion Injury in Bilharzial Livers: Controlled Experimental Study *Hussein M. Ezzat, Ahmed Hazem Helmy, Olfat M Hammam, Soheir S. Mahmoud, Maha M Akl* *Egypt*
09:10 – 09:20	Pan Arab Liver Transplant Web-Based Registry *Shazia Naz Subhani* *KSA*
09:20 – 09:30	Cadaveric Organ Donation in the Arab World: Past, Present and Future *Rana Sabbagh, F Shaheen, H Khalaf, C Hamouda, F Younan, M Saleh, A Al Enazi, C Mercado* *KSA*
09:30 – 09:40	Use of the Native Liver Veins as a Source of Vein Grafts in Livivng Donor Liver Transplantation: Technique, Difficulties and Complications *Hossam Eldeen Soliman, Tarek Ibrahiem, Bassem Soliman, Maher Osman, Omkaalthom Elhadad, Ibraheim Salama, Ibrahiem Marwan* *Egypt*
09:40 – 09:50	Hepatic Artery Thrombosis after Activated Factor VII Use in LDLT *Anwar Jarrad, Abdalla Al Bashir, Muaweih Ababneh, Sa' eb Hammoudi, Refa'at Shehab, Hani Abu Ghosh* *Jordan*
09:50 – 10:00	Living Related Liver Transplantation for Hepatocellular Carcinoma in Egypt: Going Beyond Milan Criteria *Mahmoud El Meteni, Alaa Hamza, Mohamed Fathy, Amr Abd -El Aal , Ibrahim Mostafa, Rasha Refay , Wael Safwat, Medhat Abd-El Aal , Mohamed Bahaa , Hesham Abdel Kader, Ahmed Mokhtar , Fawzeya Abd El Fatah* *Egypt*
10:00 – 10:10	Hepatic Artery Reconstruction in Left Lobe Liver Transplantation: Difficulties and Outcomes *Hossam Eldeen Soliman, Tarek Ibrahiem, Bassem Soliman, Osama Hegazy, Ibrahim Marwan* *Egypt*

10:10 – 10:30 **Coffee Break**

10:30 – 11:50 **Plenary Session III**

Chairs: Hassan Annab, Kamel Bentabak, Ahmed Al Omair

10:30 – 10:50 Liver Transplantation for Malignant Disease
Nizar N. Zein, USA

10:50 – 11:10 Living Donor Liver Transplantation for Hepatocellular Carcinoma
Yaman Tokat, Turkey

11:10 – 11:30 LDLT vs. DDLT
Mohamed Al Sebayel, KSA

11:30 – 11:50 Management of Hepato-Renal Syndrome
Thomas D. Boyer, USA

12:00 – 14:00 **Industry Symposium Sponsored by Novartis**

Chairs: Walid Obeidat, Mahmoud El-Meteini, Mohammed Al Quaiz

12:00 – 12:30 Recurrent Disease in HCV-Positive Liver Transplant Recipients: The Role of Neoral®
Nizar N. Zein, USA

12:30 - 13:00 Treatment of Recurrent Hepatitis C after Liver Transplantation
Anwar Jarrad, Jordan

13:00 - 14:00 **Lunch Break Sponsored by Novartis**

14:00 – 15:20 **Free Papers**

Chairs: Imad Ghazzawi, Taher Khalfallah, Alaa Hamza

14:00 – 14:10 Auxiliary Liver Transplantation for Acute Liver Failure in Children
Walid Faraj, Gabriele Marangoni, Faisal Dar, Nemer Kharroubi, Koji Asai, Adam Bartlett, Deborah Mukherji, Hector Vilca Melendez, Anil Dhawan, Marianne Samyn, Nigel Heaton, Mohamed Rela
United Kingdom

14:10 – 14:20	One Hundred Thirty-three Liver Transplants in Children: Riyadh Military Hospital Experience *Iftikhar Khan, Sami Wali, Hammood Hebbi, Zahid Arain, Mohammed Shagrani, Ahmed Elgohairy, Atef Bassas* *KSA*
14:20 – 14:30	Pediatric Living Donor Liver Transplantation in Riyadh Military Hospital; Donor Experience and Outcome *Ahmed Elgohary, Haider Al-Shurafa, Iftekhar Khan, Atef Albassas* *KSA*
14:30 – 14:40	Laparoscopic Living Donor Left Lobe Liver Harvesting in Pediatric Liver Transplantation (Initial Results) *Abdelaal Amr, Ali Choukr, Adham Mustapha, Dumortier Jérôme, Sagnard Pierre, Boillot Olivier* *France*
14:40 – 14:50	Biliary Reconstruction in Pediatric Living-Donor Liver Transplantation: Comparison of Different Techniques in 30 Recipients *Hesham Abdelkader, Hatem Safaan ,Amr Abdelal, Mohamed Fathy, Mohamed Bahaa, Mohamed Shaker, Ahmed Mokhtar, Hany Said, Karim Riad, Mahoud Elmetini, Olivier Boillot and Alaa Hamza.* *Egypt*
14:50 – 15:00	Using Marginal Right Lobe Living Liver Donors: Safety of Expanding the Margins *Sameer Smadi, Murat Dayangac, Deniz Balci, Sahem Al Qossous* *Turkey*
15:00 – 15:10	Chylous Ascites after Living Donor Liver Transplantation *Anwar Jarrad, Abdalla Al Bashir, Muaweih Ababneh, Sa' eb Hammoudi, Refa'at Shehab, Hani Abu Ghosh* *Jordan*
15:10 – 15:20	Outcome Of Donors in Living Donor Liver Transplantation: 180 Donors from Single Center *Mahmoud El Meteni, Alaa Hamza, Mohamed Fathy, Amr Abd -El Aal , Ibrahim Mostafa, Rasha Refay , Wael Safwat, Medhat Abd-El Aal , Mohamed Bahaa , Hesham Abdel Kader, Ahmed Mocha, Fawzeya Abd El Fatah* *Egypt*

15:20 – 15:40	**Coffee Break**
15:40 – 17:00	**Plenary Session IV**

Chairs: Jamal Haddad, Ibrahim Al Turaif, Adel Hosny

15:40 – 16:00	Partial Grafts Versus Whole Grafts in Adult Liver Transplantation, Technical Aspects and Results *Olivier Boillot, France*
16:00 – 16:20	Radiologic Evaluation of Liver Transplant Patient *Refik Killi, Turkey*
16:20 – 16:40	Surgical Controversies in Living Donor Hepatectomy *Yildiray Yuzer, Turkey*
16:40 – 17:00	Post-Reperfusion Syndrome Consequence and Management *Fawzeya Aboul Fetouh, Egypt*
17:00 – 17:40	**Pediatrics Session**

Chairs: Sa'eb Hammoudi, Abduljaleel Alwan, Feisal Shaheen

17:00 – 17:20	Pediatric Living Donor Liver Transplantation *Eduardo Carone, Brazil*
17:20 – 17:40	Specific Issues in Pediatrics Liver Transplant *Alaa Hamza*
17:40 – 18:40	**PALTS General Assembly Meeting**
20:00 - ….	**Congress Dinner at Le Royal Hotel Sponsored by Sanofi Aventis**

Post Graduate Course

PG-01

Complications of Liver Transplantation: Interventional Management

Mazen K Abu Awad, MD
Chief of Interventional Radiology at St. Anthony's Medical Center at St. Louis, Missouri

Advances in surgical technique and immunosuppressive therapy have led to excellent results for orthotopic liver transplantation in both adults and children. Despite these advances, vascular and biliary complications remain a significant problem. The most common biliary complications are bile leaks and biliary obstruction. Although hepatic arterial thrombosis and stenosis are the most common vascular complications, portal venous, hepatic venous and IVC lesions do occur. The patient's presentation in part depends on the site and acuity of the lesion. Many lesions are identified on routine post-transplantation US before they are clinically apparent. Routine screening with US is critical to early detection of these complications. Careful application of standard interventional techniques (diagnostic catheter angiography, PTC, balloon dilatation with selective stenting) may be used to confirm the imaging findings, treat the underlying lesions, and contribute to long-term graft survival. As the demand for liver transplantation increases and as nonsurgical interventions become the first-line treatments in vascular and biliary complications, interventional radiologists are playing an increasingly vital role in the long-term care of transplant recipients.

PG-02

Management of ascites and renal failure in the patient awaiting liver transplant

Thomas Boyer, MD
Professor of Medicine University of Arizona, Tucson, Arizona

Ascites is common in patients with cirrhosis and portal hypertension. Initially the ascites is easily treated with diuretics. However, as liver function worsens so will the hyperdynamic circulation and the ascites becomes more difficult to treat. Many patients with refractory ascites are awaiting liver transplant and once the ascites becomes refractory to diuretic therapy the options to manage the ascites are large volume paracentesis (LVP) or a TIPS. A number of trials have been published comparing these two approaches and TIPS is more effective in controlling the ascites but at the risk of increased encephalopathy and no difference in survival. At this time TIPS should be reserved for those who require a LVP more often than monthly. With the development of refractory ascites the patients also are at increasing risk of developing the hepatorenal syndrome (HRS) especially following spontaneous bacterial peritonitis (SBP). The risk of developing HRS can be reduced by avoiding nephrotoxic drugs such as aminoglycosides and NSAIDS. In addition, the use of prophylactic antibiotics in cirrhotics with GI bleeding and using albumin following LVP or in the patient with SBP appears to reduce the risk of developing HRS. If the patient develops HRS then the use of vasoactive drugs such as terlipressin may reverse the renal failure allowing the patient to avoid dialysis.

PG-03

Living Donor Liver Transplantation in Children

EduardoCarone MD

Director of Liver Transplantation Program Hospital AC Camargo & Hospital Sirio Libanes - Sao Paulo, Brazil.

Liver transplantation in infants remains challenging as a result of the paucity of donor organs and the technical difficulties encountered in these small patients, especially vascular thrombosis. The low number of deceased donors in Brazil and the high waiting list mortality in these small infants, encourage the use of living donor liver transplantation (LDLT) in this population. The accumulating results of LDLT in children are comparable to those of deceased donor liver transplantation. A new technical challenge came up after LDLT became an option: the use of large-for-size left lateral segment grafts in small children or infants may result in serious hemodynamic problems, including hepatic outflow obstruction, portal vein thrombosis (PVT), poor perfusion of the graft (as a result of compression and/or low portal flow) leading to graft dysfunction or nonfunction, difficulty in abdominal wound closure, and ventilatory problems. Children <1 year of age, with 10 kg or less of body weight, low portal flow (≤ 7 cm/s), small portal venous size (≤ 4 mm), and (GRWR >3%) are strongly associated with PVT. Further graft reduction could be necessary to overcome the large-for-size graft syndrome. Monosegmental liver transplantation has been recently introduced for small infants to mitigate the problem. A report from Kyoto showed that infants with an estimated GRWR of ≥4.0% were candidates to receive monosegments. We present our 11-year experience in LDLT in patients weighing ≤10 kg, with an analysis of the factors affecting posttransplantation survival and the incidence of vascular complications, paying special attention to GRWR.

PG-04

Transfer of Experience and Analysis of the Effect of Learning Curve in Adult-to-Adult Living Donor Liver Transplantation

Olivier Boillot, MD

Prof and head of the department of hepato-biliary and pancreatic surgery and liver transplantation in Edouard Herriot hospital, Lyon, France.

A2ALDLT has evolved to minimize mortality on the waiting list and it is of crucial importance in some Asian and Arab countries in which cadaveric transplantation is not yet feasible. We aimed at highlighting our experience of collaboration between two centres in France and Egypt to study the learning curve and to judge the feasibility of transfer of experience in this operation.

From December 1998 to November 2006, 128 cases were performed in the two centres using right lobe graft from living donors. Patients were divided into 3 groups while each group comprised 2 phases (A= initial and B= delayed). Group I was transplanted by the French team, group II by both teams and group (III) by the Egyptian team alone. Phase A was compared with phase B in groups I and III to study the learning curve as well as the initial phases in groups I and III to assess the impact and feasibility of transfer of experience.

Comparing group IA with IB; there was significant reduction of donor's operative time, cold ischemia time, recipients' transfusion and donors' cell saver transfusion. Donor complication rate was reduced (major from 16% to 12.5%, minor from 36% to 25% and overall from 52% to 37.5%), while recipients' complication rate was reduced (biliary from 28% to 8.3% and over all from 60% to 33%) and recipients' mortalities from 12% to 0 %. Similar findings were noticed when comparing groups IIIA with IIIB. Comparing group IA with IIIA, comparable operative variables as well as donors and recipients outcome were observed.

Outcome in A2ALDLT correlates with centre experience. Transfer of experience is possible and it avoids most of the serious complications and by passes part of the learning curve.

PG-05

When Should We Perform a Liver Transplant? And When Should We Not?

Goran B. Klintmalm, MD, FACS, PhD

Chairman and Chief of the Baylor Regional Transplant Institute in the Dallas/Fort Worth Metroplex. Director of the Dallas Liver Transplant Program.

When liver transplantation developed in the 1960's - 1980's it was recognized that liver replacement was appropriate in liver disorders with the eminent threat of death. Since that time, a number of other liver diseases which are not fatal, yet the metabolic products or other dysfunctions of the liver create the threat to life, have come to be accepted as appropriate for transplantation. Over time, as liver transplantation became a standard medical treatment for organ failure much more has been learned. Appropriate guidelines for when to transplant were not truly defined until 2005 when it was recognized that calling the proverbial patient in from the golf course for transplant was probably not the most appropriate thing to do. In a publication by Dr. Merion, et al they concluded that the risk of for the recipient with a MELD score of 14 or less was significantly higher to die from transplant related complications than if they had not received the transplant at all. Merion et al reported that patients with MELD of 6-11 had a HR of 3.6; patients with MELD of 12-14 with HR of 2.35; and patients with MELD of 14 or more found that liver transplantation provided a higher chance of survival for more than a year then if not transplanted. It is well recognized, however, that several diseases are not well represented by MELD score alone and additional consideration should be given by the regional review boards as designed by UNOS. Some examples of such diseases would be for patients with hepatocellular carcinoma, pulmonary hypertension, or hepatopulmonary syndrome.

The more difficult task is how to make the decision when not to transplant. There are several valid reasons to consider. First would be if chances for survival following transplantation are poor, such as acute fulminant patients being on vasopressors in the ICU or patients over 65 with chronic end-stage liver disease admitted to the hospital because of their disease. Another principal group is those whose condition would result in severe neurological damage, incapacitation, or maybe even brain death. Examples of this are coma – stage III & IV, seizures or posturing, chronic liver disease with significant hyponatremia. A third group would be those with infections. Examples are infected stents, recent fungal sepsis or peritonitis, recent VRE/MRSA sepsis or peritonitis, or recent pneumonia.

These issues will be discussed in detail at the presentation.

Core Lectures

CL-01

Therapy of Hepatitis C in Patients with Advanced Liver Disease

Ala Toukan, MD

Professor of Gastroenterology and Liver Disease

Faculty of Medicine, University of Jordan, Amman, Jordan

Hepatitis C infects roughly 170 million persons worldwide, three quarters of whom may be HCVRNA-positive; these are susceptible to a 12.5% rate of progression to cirrhosis and finally to decompensation or hepatocellular carcinoma. Interferon and ribavirin combination therapy in the early stages of HCVRNA-positive disease may result in delay or reversal even in fibrosis and cirrhosis, and thus in disease progression. Few studies show the effect of this therapy in decompensated HCVRNA liver disease. Sustained viral response rates around 20% may be achieved, though more severe side effects experienced in such patients may limit this response. While the effect on decompensation in the long-term in responders is not well documented, those undergoing liver transplant remain HCVRNA-negative. Conversely those not responsive to therapy are liable to re-infection by HCV after transplantation. Maintenance therapy with interferon in the non-responder patient with cirrhosis may reduce fibrosis but disease progression to decompensation appears to be similar to that in control patients.

CL-02

Critical Aspects of Anesthesia for Liver Transplant

Michael A. E. Ramsay, MD, FRCA

Clinical professor in the Department of Anesthesiology and Pain Management at the University of Texas Southwestern Medical School

Chairman of the Department of Anesthesiology and Pain Management at the Baylor University Medical Center in Dallas, Texas

Medical Director of Anesthesia Services at Baylor's Jack and Jane Hamilton Heart and Vascular Hospital, Co-Medical Director for Operating Room Services at BUMC

President of the Baylor Research Institute

Anesthesia management of the liver transplant recipient may involve taking into consideration a severely debilitated patient with multiple organ system malfunctions, alterations in physiology and pharmacology, a severe coagulopathy, encephalopathy, cardiomyopathy, respiratory failure, massive abdominal ascites and pleural effusions, renal dysfunction, severely deranged serum electrolytes, together with an emergent situation.

The patient in fulminant hepatic failure may develop deep coma, severe brain edema with marked increase in intracranial pressure, and be at major risk of brain herniation. The aim of anesthetic management is to keep the intracranial pressure < 20 mmHg, the cerebral perfusion pressure > 50 mmHg and the mean arterial pressure > 60 mmHg.

The transesophageal echocardiograph (TEE) offers a very comprehensive assessment of volume status, together with left and right ventricular function.

Renal dysfunction may also present as hepatorenal syndrome (HRS), where there is no parenchyma damage, but there is profound hypoperfusion of the kidney caused by vasoconstriction. The diagnosis of HRS is based on the absence of primary renal disease, proteinuria, hypovolemia, and renal hypoperfusion. HRS is reversible with liver transplantation, but may progress to acute tubular necrosis that is not reversible.

The patient with liver disease may develop major coagulation abnormalities. Frequently, splenomegaly, nutritional deficiencies and variceal bleeding coexist and result in an associated thrombocytopenia and anemia. The liver is not only responsible for the production of many coagulation factors—I, II, V, VII, VIII, IX, X, XI, XII and XIII—but also for the synthesis of coagulation inhibitors, fibrinolytic proteins and their inhibitors. It also clears all activated coagulation and fibrinolytic enzymes.

CL-03

Viral Hepatitis in the Middle East and the burden of the disease

Faleh Al-Faleh, MD

Professor of Medicine, King Saud University, Riyadh, Saudi Arabia

KSA had introduced the mass vaccination against HBV to all infants at birth since 1989, also to all school children at 1990 for five years as cactch-up program. Based on this programme 64% of the Saudi population are supposed to be vaccinated. However, the infected person in the non-vaccinated population need to be studied. REVEAL STUDY has inspired us to look at the natural history of these population, therefore we established a multi center date base of all HBV infected person who come to these center. Since establishing this date base in 2007 we entered the date of 1039 patients form three centers in Riyadh. The HBV DNA PCR of these infected persons were analyzed n order to see the possible natural history of these patients. 29% were found to be negative for PCR, 5% has <3 log 10, and 11% has <4 log 10, only 8% has > 4log 10. I will compare this data with the international literature especially the natural history of HBV infection in the Mediterranean area compared to the chines studies.

CL-04

Surgical Issues and Techniques in Liver Transplantation

Mehmet Haberal, MD, FACS, FICS (Hon),

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Founder and President, Baskent University, Ankara, Turkey

Between September 2001 and January 2007, we performed 210 Orthotopic liver transplantations (OLT) at our center. 103 of them were children and 107 were adults. Forty children weighed less than 10 kg, and 35 were younger than 1 year old at the time of OLT. Liver grafts were obtained from deceased donors in 44 patients and living-related donors in remaining 166. If we briefly summarized our surgical technique, the diseased liver was removed, leaving the IVC intact with the right hepatic vein and the trunk of the middle hepatic vein and left hepatic vein clamped separately. During hepatectomy, the common bile duct, hepatic arteries and portal vein were dissected at their branches, and the liver parenchyma was cut at the level of the left and right hepatic bifurcation. All biliary and vascular anastomoses were performed with loop magnification (2.5×). In the case of living related OLT, we performed the hepatic vein anastomoses, depending on the graft's vein side. When the right liver lobe was transplanted, we performed hepatic anastomoses to the recipients' right hepatic vein conduit. If the graft has an inferior hepatic vein with a diameter larger than 5 mm, we perform end-to-side anastomosis to inferior vena cava. When the graft is either a left lobe or a left lateral lobe, we close the right hepatic vein conduit and perform the anastomosis after a venoplasty of the middle-left vein conduit of the patients. Thus, in some cases, especially in cadaveric OLT, we closed both sides of the vena cava conduit of the graft. We then performed a side-to-side vena cava anastomosis. The graft was rinsed with 5% albumin after

completion of the hepatic vein anastomosis. Reconstruction of the portal vein was performed using an end-to-end venovenous anastomosis. If there was a size discrepancy between the graft portal vein and the recipient portal vein, the smaller-sized portal vein was spatulated from both the anterior and the posterior walls to create a wide anastomosis site. The arterial anastomosis is performed between the recipient common hepatic artery, the gastroduodenal artery junction or the hepatic artery branches, and the hepatic artery of the graft. In the first 112 LTs, a modified parachute technique was used for hepatic artery reconstruction. In the last 98 LTs, a new technique at our institution was used. In this technique, native and graft hepatic arteries were spatulated from the anterior and posterior walls to provide wide anastomoses. In the presence of multiple hepatic arteries, we prefer to reconstruct all of the hepatic arteries. Intraoperative hepatic blood flow was assessed by Doppler ultrasonography. In OLT, we prefer duct-to-duct anastomoses for bile duct reconstruction except in patients with biliary atresia in all age group. Biliary reconstruction was completed with a duct-to-duct anastomosis in 167 OLT and with a Roux-en-Y hepaticojejunostomy in 43 OLT. We used different drainage techniques to allow external bile drainage in first 141 OLT, in the last 69 OLT, no tubes or stents were used for external bile drainage. The overall complications rate of hepatic vein, portal vein, hepatic artery, and biliary system was 3.8%, 2.3%, 7.6%, and 19.5%, respectively. In conclusion, our vascular and bile duct reconstruction techniques enable to reconstruct vessels and bile ducts with small or various diameters without an operating microscope. The rate of complications in our patients is similar to that reported in similar individuals.

Keyword: Orthotopic liver transplantation, vascular reconstruction techniques, bile duct reconstruction

CL-05

Optimal Immunosuppression for Liver Transplantation and the Use of Prograf

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Chemical immunosuppression began in 1960 at Peter Bent Brigham Hospital when Dr. Murray used the metabolite Azathioprine, which the visiting transplant fellow, Roy Calne, had experimented with in the dog lab. Once a rejection occurred, which it usually did, the grafts were universally lost since rejections could not be treated. In 1963, another young surgeon by the name of Thomas Starzl, in Denver, Colorado, showed that the rejections could be successfully treated with steroids and subsequently followed by permanent graft acceptance. A few years later the anti-lymphocyte globulin, an antibody against the thymus derived lymphocytes, was developed in Denver. By 1970 immunosuppression consisted of ALG, Azathioprine, and steroids. The results were still poor, but with the introduction of cyclosporine by Roy Calne in 1979, transplantation was revolutionized in the following years. A calcineurin inhibitor was far more immunosuppressive than an anti-metabolite drug. This allowed for a substantial decrease of corticoid steroids, which allowed the patients to survive the post-transplant complications. In 1988, Tacrolimus was beginning to be investigated by Starzl in Pittsburgh. After the presentation of the results of the Tacrolimus multi-center trial in 1992 in Sydney, Prograf has become the standard calcineurin inhibitor used in clinical organ transplantation. Tacrolimus prevents allograft rejection more effectively and lacks some of the cosmetic side effects that plague many cyclosporine recipients. Other drugs have since been added, such as Mycophenolate Mofetil, which in many ways can be regarded as a more modern, more powerful and less side effect prone anti-metabolite. The latest additions to oral therapy are mTOR inhibitors. They add a new interesting aspect to organ transplantation. They offer a very different side effect profile from the calcineurin inhibitors, but seem less immunosuppressive. It does not have the standing of a first line immunosuppressive drug. Finally the antibody therapies continue to this day. They are now in the form of monoclonal antibodies, such as Daclizumab and Basiliximab, which are IL-2 inhibitors and the more classical lymphocytic antibodies, such as the monoclonal OKT3, the polyclonal Thymoglobulin and the eminently powerful monoclonal Alemtuzumab.

The pros and cons of these various drugs and where they belong in an immunosuppressive protocol will be discussed in detail.

CL-06

Specific Aspects of Immunosuppression in Liver Transplantation

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Life-long immunosuppressive treatment is generally necessary after allogeneic organ transplantation. However, in animal models as well as in clinical practice, liver transplant recipients usually require less immunosuppressive treatment than recipients of other organs (kidney, heart, lung, pancreas etc.). The reasons for that are still unclear, although many hypothesis exist on that. In fact, about 10 % of all liver transplanted patients could be withdrawn from immunosuppression in the long-term without graft loss. Misfortunately, there are still no defined parameters to predict which patients belong to that group – all others would experience graft rejection in case of withdrawal of immunosuppression.

While acute as well as chronic rejection are only a minor problem in liver transplantation, the short-term and long-term side effects are a major problem in these patients. The side effects include nephrotoxicity, diabetogenicity, hypertension, hypercholesterolemie, osteoporosis, and others. Since every patients has his/her individual risk profile, immunosuppression should be individually adjusted in every patient in order to meet the individual needs. Moreover, considering the low risk of rejections – particularly in patients that are critically ill at the time of transplantation, a rather low immunosuppression is generally sufficient. In case of rejection – diagnosed by biopsy in case of increasing transaminases or bilirubin – immunosuppression can be increased.

Liver graft recipients generally need only low immunosuppressive medication. The type, dosage, and combination of drugs should be adjusted individually according to immunological risk and side effect profiles.

CL-07

Immunosuppression Shift; When & Why

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Abstract not available

CL-08

Vascular Complications of Liver Transplant

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Advances in surgical technique and immunosuppressive therapy have led to excellent results for orthotopic liver transplantation in both adults and children. Despite these advances, vascular and biliary complications remain a significant problem. The most common biliary complications are bile leaks and biliary obstruction. Although hepatic arterial thrombosis and stenosis are the most common vascular complications, portal venous, hepatic venous and IVC lesions do occur. The patient's presentation in part depends on the site and acuity of the lesion. Many lesions are identified on routine post-transplantation US before they are clinically apparent. Routine screening with US is critical to early detection of these complications. Careful application of standard interventional techniques (diagnostic catheter angiography, PTC, balloon dilatation with selective stenting) may be used to confirm the imaging findings, treat the underlying lesions, and contribute to long-term graft survival. As the demand for liver transplantation increases and as nonsurgical interventions become the first-

line treatments in vascular and biliary complications, interventional radiologists are playing an increasingly vital role in the long-term care of transplant recipients.

CL-09

Biliary Complications of Liver Transplant and the role of Endoscopic Therapy

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Biliary complications occur in approximately 15-20% of adults following orthotropic liver transplantation (OLTX) and higher in living related liver transplant (LDLT). They usually occur two to six months after transplant, and can affect the common bile duct or intrahepatic biliary tree.

Bile duct strictures can be anastomotic or nonanastomotic, Strictures of the common bile duct frequently involve the anastomosis and result from technical factors occurring during surgery; strictures involving the anastomosis or the donor common bile duct can also arise from ischemia. Hilar strictures and diffuse intrahepatic strictures result from ischemia, prolonged cold ischemia time, transplantation of an ABO incompatible organ, and chronic rejection Other anastomotic strictures are caused by fibrosis and scarring that can be associated with bile leaks.

Anastomotic stenosis can be related to marginal blood supply of the cut ends of the donor and recipient ducts; stricturing results from anastomotic ischemia. Nonanastomotic strictures can be caused by HAS, HAT, prolonged cold ischemia time, rejection, cytomegalovirus infection, intraductal sludge and stone formation, and recurrent primary sclerosing cholangitis in the allograft. Unlike the native biliary tree that is supplied by collaterals from the gastroduodenal artery, the harvested donor bile duct and the anastomotic end of the recipient duct are solely dependent on the hepatic artery. Compromise of the hepatic artery by HAS or HAT results in abrupt ischemia and necrosis of the biliary epithelium. This causes strictures, disruption of the ducts, bile leaks, bilomas, infected bilomas, and abscesses.

Biliary strictures should be suspected in patients who develop cholestatic liver function tests (elevated serum alkaline phosphatase, gammaglutamyl transferase, and bilirubin). Overt cholangitis is rare, Dominant biliary strictures can be detected using US, CT, MRI, magnetic resonance cholangiography (MRC), percutaneous transhepatic cholangiography (PTC), and endoscopic retrograde cholangiopancreatography (ERCP), although stricture should be suspected even with normal imaging in patients with unexplained abnormal liver enzymes.

Common bile duct and hilar strictures usually treated endoscopically by ERCP, endoscopic therapy with dilation combined with stenting, Surgical revision with roux-en-Y anastomosis is reserved for patients in whom balloon dilatation and stenting are unsuccessful. Treatment of diffuse intrahepatic strictures is more challenging. Balloon dilatation and stenting of larger strictures may provide palliation, although patients with extensive biliary disease commonly require retransplantation., Strictures involving the donor hepatic duct are more likely to be related to vascular insufficiency, and are therefore less responsive to endoscopic therapy.

CL-10

Infectious Disease Complications in Transplanted Patient

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Infections after liver transplatation can have devastating consequences. A discussion of established risk factors, manifestatons, diagnostic approaches and therapeutic strategies is presented, together with review our local experience with 40 living -related liver transplant recepients and related infectious complications.

CL-11

Liver Transplantation for Malignant Disease

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Medical Director of Liver Transplantation at the Cleveland Clinic.

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Hepatocellular carcinoma (HCC) is undoubtedly the most serious and dreaded complication of chronic liver disease. While less common in the United States compared to other parts of the world, it has been estimated that > 550,000 new cases of HCC occurred worldwide in the year 2000 with a men/women ratio of almost 2:1 (1). Despite being less common in the U.S. compared to other countries, the incidence of HCC is rising and has been for the past 2 decades coinciding with the emergence of hepatitis C infection (HCV) and nonalcoholic steatohepatitis. Short of liver transplantation, advances in therapy have been hampered by underlying liver cirrhosis and high rate of recurrence. Liver transplantation, when patients are selected carefully, is associated with high rate of cure and is currently the treatment of choice for the management of this aggressive malignant tumor. Similarly liver transplantation has proved effective as a curative measure in other malignant disorders including cholangiocarcinoma and neuroendocrine malignancies with liver metastasis.

An emerging scientific debate over the ethics of providing liver transplantation as a measure to treat patients with malignant disorder especially in the era of organ shortage and will be discussed during the presentation.

CL-12

Living Donor Liver Transplantation for Hepatocellular Carcnoma (or Living donor liver transplantation patients with hepatocelluler carcinoma within and beyond Milan criteria)

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Director of Liver Transplantation Program, İstanbul, Turkey

Living donor liver transplantation (LDLT) emerges as a major treatment option for patients with hepatocelluler carcinoma (HCC). We aimed to evaluate the results of the patients with HCC classified within and beyond Milan criteria (MC). Methods: Between July 2004- Feb 2007, 103 consecutive LDLT were performed in our center. There were 29 cases with HCC (23 men, 6 women), mean age was 55 years. Preoperatively all prospective recipient underwent evaluation with CT/MRI. LDLT was considered for patients with negative metastatic work up. Excluding 2 deaths 27 patients were included in the analysis. Preoperatively 9 patients were considered beyond Milan criteria (MC). Three out of 9 had portal vein thrombosis. Results: 13 patients were found to be and 14 patients beyond MC after pathological examination. Mean follow up was 385 days. Preoperative AFP was 153ng/dl. HCC recurred in 3 patients (11.1%). 1within and 2beyond Milan criteria. Tumor differentiation was lower in patients within Milan criteria. Survival and recurrence of patients within or beyond MC was not statistically significant.

Indication of LDLT can be expanded to include tumors beyond Milan criteria. LDLT offers early transplantation opportunity with comparable results for patients with HCC exceeding MC.

CL-13

LDLT vs. DDLT

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

President of the Pan Arab Liver Transplantation Society

Herein we present our experience with both deceased donor Liver Transplantation (DDLT) and living-donor Liver Transplantation (LDLT). Between April 2001 and January 2008, 160 LT procedures were performed (106 DDLTs and 54 LDLTs) in 156 patients (4 re-transplants). Results: Overall male/female ratio 92/64, adult/pediatric 142/14, and median age 43 years (range, 1.5 - 64 years). In the DDLT group; median operating time was 8 hours (range, 4-19), median blood transfusion was 6 units (range, 0-40), and median hospital stay was 14 days (range, 6-183). In the DDLT group; after a mean follow-up period of 866 days (range, 4-2452), the overall patient and graft survival rates was 87.7%. In the LDLT group; median operating time was 10 hours (range, 7-17), median blood transfusion was 4 units (range, 0-65), and median hospital stay was 15 days (range, 7-142). In the LDLT group; and after a mean follow-up period of 910 days (range, 8-1907), the overall patient and graft survival rates were 87% and 81.4% respectively. There was no significant difference in patient and graft survivals between both groups. Biliary complications were significantly higher in LDLT compared to DDLT, 27.8% vs. 3.7% respectively ($P<0.05$). Vascular complications were also slightly higher in LDLT compared DDLT, 7.4% vs. 4.7% respectively ($P>0.05$).

Both DDLT and LDLT are being successfully performed with good outcomes. Early experience indicates higher rate of biliary and vascular complications in the LDLT group

CL-14

Management of varices in the patient awaiting liver transplant

Thomas Boyer, MD

Professor of Medicine University of Arizona, Tucson, Arizona

Between 50 and 80% of patients awaiting liver transplant have varices and in many the varices are large and at risk of bleeding. It is therefore important that patients with cirrhosis who are being evaluated for transplant have a screening endoscopy for varices. This is especially true if the platelet count is low or spleen enlarged. If large varices are found the patient needs to receive prophylaxis. Although there is some controversy as to whether variceal band ligation is superior to beta blockers, it is my opinion that beta blockers should be used first and band ligation used only in those patients who are intolerant of beta blockers. If the patient has bled once from varices then a combination of beta blockers plus variceal band ligation is the best approach. Approximately 15-20% of patients will fail medical therapy and are candidates for a TIPS or a surgical shunt. Both approaches are effective in preventing rebleeding and survival and incidence of encephalopathy are also the same with either approach. TIPS appears to be somewhat more cost effective than surgical shunts and TIPS is the preferred approach to the management of patients who fail medical therapy. Patients who are Child-Pugh class C should have the TIPS performed at a transplant center.

CL-15

Liver Transplantations in the Setting of Hepatitis C

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Hepatocellular carcinoma (HCC) is undoubtedly the most serious and dreaded complication of chronic liver disease. While less common in the United States compared to other parts of the world, it has been estimated that > 550,000 new cases of HCC occurred worldwide in the year 2000 with a men/women ratio of almost 2:1 (1). Despite being less common in the U.S. compared to other countries, the incidence of HCC is rising and has been for the past 2 decades coinciding with the emergence of hepatitis C infection (HCV) and nonalcoholic steatohepatitis. Short of liver transplantation, advances in therapy have been hampered by underlying liver cirrhosis and high rate of recurrence. Liver transplantation, when patients are selected carefully, is associated with high rate of cure and is currently the treatment of choice for the management of this aggressive malignant tumor. Similarly liver transplantation has proved effective as a curative measure in other malignant disorders including cholangiocarcinoma and neuroendocrine malignancies with liver metastasis.

An emerging scientific debate over the ethics of providing liver transplantation as a measure to treat patients with malignant disorder especially in the era of organ shortage and will be discussed during the presentation.

CL-16

Treatment of Recurrent Hepatitis C after Liver Transplantation

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Liver transplant for Hepatitis C End Stage Liver Disease (ESLD) is the commonest cause for liver transplant (LTx) in the USA. Hepatitis C recurs in the new liver from pre existing infection or from a new acquired infection (Rare). Virologic recurrence occurs in over 95% of patients since most patients are viremic at the time of LTx. Recurrence can be mild in 20%, mild to moderate in 50%, progressive in 20% and severe or Fibrosing cholestatic hepatitis in 5-10%. Prevention of recurrence starts with treating theses patients before LTx if feasible, avoiding old donors, and wise treatment of rejection and avoiding rejection in the first place.

If HCV recurs, proved by chemistry and biopsy, then treatment can be started with minimizing immunosuppresion, avoiding rejection episodes, and using interferons, also the choices of immunosuppresion might have an impact on recurrence.

If all fails and re transplantation is required, then the issue is organ availability, treating the virus and re transplanting at a stage when there is no renal or multiorgan failure.

Some evidence suggests that Pegylated interferon plus hemopoietic growth factors have a better outcome.

CL-17

Partial Versus Whole Grafts in Adult Liver Transplantantation, Technical aspects and Results

Olivier Boillot, MD
Prof and head of the department of hepato-biliary and pancreatic surgery and liver transplantation in Edouard Herriot hospital, Lyon, France.

In the aim to overcome the shortage of grafts in adult liver transplantation, alternative strategies to whole liver transplantation were attempted. The main ones concerned the use of partial liver grafts from split livers and living donors. In this setting, several challenges arose. First, the minimal amount of liver tissue needed

to achieve satisfactory post-transplant liver function was one of the main issues. Second, new refinements in transplant techniques had to be solved to avoid excessive rate of technical failures.

Regarding the safe amount of hepatic mass, the widespread development of living donor transplantation led to assume that a graft-to-recipient-weight ratio more than 0.8 to 1% or at least 40% of the standard liver volume was required for limiting the risk of small-for-size syndrome and graft failure. Portal hypertension was found to represent an additional risk factor to be taken into account. Technical refinements included upon a new appraisal of liver anatomy, the need of preserving inflows and outflows of both hemi-livers as well as the integrity of the two biliary trees. Moreover, smaller vessels and bile ducts from each hemi-livers required more sophisticated techniques of anastomoses with those of the recipients. Considering these facts, initial results were not as good as those of whole liver transplantation until a learning curve effect led to dramatic improvement in large volume centers. Nowadays, with appropriate patient selection and techniques, results of liver transplantation using partial grafts are becoming similar to those of whole liver grafts.

CL-18

Radiologic Evaluation of Liver Transplant Patients

Refik Killi,MD

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Liver transplantation is an accepted first-line and successful treatment for patients with end-stage liver disease. However, preoperative evaluation of the patients and postoperative complications may limit the long-term success of the liver transplantation. A multimodality approach including ultrasonography and cross-sectional imaging modalities such as CT and MRI often is most effective in preoperative and postoperative period.

In this lecture, radiologic examinations currently used in liver transplantation are presented.

CL-19

Surgical Controversies in Living Donor Hepatectomy

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Abstract not available

CL-20

Post- Reperfusion Syndrome Consequence and Managements

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Consultant of anesthesia in Wadi El Nile hospital, Cario, Egypt.

Post reperfusion syndrome is defined as decreased MAP of at least 30% from baseline for at least one minute within five minutes of reperfusion manifested by Labile SVR, and low CO Incidence as high as 30%.

If graft function is adequate, hemodynamic stability generally occurs within 15 min following reperfusion Mechanism(s) of PRS.

Isolated RV dysfunction (as detected by echo – paradoxical motion of IVS, etc.)

Impaired LV function. Endotoxemia , Cytokine release (TNF, IL-1, IL-6 , and other vasoactive substances following decompression of the portal circulation Most likely multifactorial in nature Other factors affecting

post reperfusion hemodynamic Hyperkalemia, Hyocalcemia, Continued blood loss, Air embolism. Treatment of Post -Reperfusion instability Inotropic support, Calcium, Sodium Bicarbonate, 100% Oxygen.

Aggressive electrolyte management pre-reperfusion ACLS, Hyperkalemia, ECG changes generally seen at > 6.0 meq/L, Immediate tx with Calcium salt Then :

– Insulin with glucose (10 U with 50 ml of 50% glucose)

– B agonist (10-20 mg nebulized albuterol)

– Sodium Bicarbonate

– K removal – (Loop diuretic, Kayexelate, Dialysis)

Value of using UW Solution Cell impermeant agents – Lactobionic Acid, Raffinose, Hydroxyethyl starch Glutathione – Antioxidant Adenosine – Cellular metabolism Autologous Flush Prior to reperfusion. All vascular anastamoses completed except for infrahepatic IVC, Graft perfused via unclamping Portal Vein, and Hepatic Artery, 500 cc of blood allowed to flow out of partially anastamosed infrahepatic IVC, then into cell saver, Blood supply then reclamped, and infrahepatic IVC anastamosis completed Associated increase in HD stability, decreased serum K levels, improved early graft function, increased patient and graft survival Conclusion: Postreperfusion syndrome following the graft revascularization is a serious consequence which endanger the neohepatic phase , proper understanding the causes and anticipation of the sequences is the key of successful managements.

CL-21

Living Donor Liver Transplantation in Children

EduardoCarone MD

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Liver transplantation in infants remains challenging as a result of the paucity of donor organs and the technical difficulties encountered in these small patients, especially vascular thrombosis. The low number of deceased donors in Brazil and the high waiting list mortality in these small infants, encourage the use of living donor liver transplantation (LDLT) in this population. The accumulating results of LDLT in children are comparable to those of deceased donor liver transplantation. A new technical challenge came up after LDLT became an option: the use of large-for-size left lateral segment grafts in small children or infants may result in serious hemodynamic problems, including hepatic outflow obstruction, portal vein thrombosis (PVT), poor perfusion of the graft (as a result of compression and/or low portal flow) leading to graft dysfunction or nonfunction, difficulty in abdominal wound closure, and ventilatory problems. Children <1 year of age, with 10 kg or less of body weight, low portal flow (≤ 7 cm/s), small portal venous size (≤ 4 mm), and (GRWR >3%) are strongly associated with PVT. Further graft reduction could be necessary to overcome the large-for-size graft syndrome. Monosegmental liver transplantation has been recently introduced for small infants to mitigate the problem. A report from Kyoto showed that infants with an estimated GRWR of ≥4.0% were candidates to receive monosegments. We present our 11-year experience in LDLT in patients weighing ≤10 kg, with an analysis of the factors affecting posttransplantation survival and the incidence of vascular complications, paying special attention to GRWR.

CL-22

Specific Issues in Pediatrics Liver Transplant

Alaa Hamza, MD

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Abstract not available

Oral Presentations

OP-01

Endoscopic Treatment of Biliary Strictures Post Living Donor Liver Transplant

Anwar Jarrad, Abdullah Al Bashir, Muaweih Ababneh, Sa'eb Hammoudi, Refa'at Shehab, Hani Abu Ghosh

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Background: Biliary strictures are common post LDLT. It is the most common biliary complication post LDLT.

The best treatment is not well standardized and depends on the local expertise. We treated 10 patients who survived more than one months and developed Biliary Strictures by endoscopic stenting with success rate reaching 90%.

Methods: In the period from 19/09/2004 till 27/11/20067 we transplanted 39 LDLT, of whom 10 patients developed BS. The BS developed at 10 -700 days post transplant. ERCP was the first modality for diagnosis and treatment. Removable plastic Biliary stents were placed at the time of diagnosis in most patients (3 patients required Rendezvous technique to aid placing the Stent though the diagnosis was made by ERCP)

The stents were changed every 3 months or when needed.

Results: successful placement was 100% either directly or by Rendezvous technique.

So far the stents were removed from three patients who completed one year without recurrence of strictures.

5/10 had stents for almost one year at this time with good results and the stents are due to be removed in 1-3 months.

Stenting was done to the main anastomotic strictures, or to the anterior /or posterior segmental ducts when the stricture involved the confluence of both segmental ducts.

In one patient with left lateral segment transplant, two stents were placed in segment 2 and 3 ducts

Conclusion: Post LDLT Biliary strictures can be managed by Endoscopic Biliary stenting as early as 10 days post LDLT.

It can be carried in very sick patients, and can treat associated biliary complications like stones and leaks. Though the follow up is not long enough, it appears effective at least in the immediate post transplant period where the patients are at the sickest stage.

OP-02

Endoscopic Management Of Biliary Complications In Living Donor Liver Transplantation (LRLT): Results From Single Center

Ibrahim Mostafa, Rasha Refay , Wael Safwat, Medhat Abd-El Aal , Mahmoud El Meteni, Alaa Hamza, Mohamed Fathy, Amr Abd -El Aal, Mohamed Bahaa , Hesham Abdel Kader

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Abstract not available

OP-02

Incidence, Pattern And Impact of Infectious Problems Following Living Donor Liver Transplantation

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Introduction: Living donor liver transplantation (LDLT) is a successful therapy for patients with end-stage liver disease. Infection is currently a life-threatening complication for these patients.

The aims of this study are to determine the incidence of various infections in patients with LDLT during early (1st month) and intermediate (2nd to 6th month) postoperative periods, to study overall survival rates and survival as related to individual infections, and to investigate the risk factors associated with first episodes of bacterial (BI), fungal (FI), and viral including cytomegalovirus (CMV) infections.

Methods: The study includes 128 LDLTs performed in 128 recipients from October 2001 to May 2007, those patients were followed up for six months after liver transplantation operation. A descriptive analysis estimating the 95% confidence interval was performed with 100 variables stratified according to preoperative, operative and postoperative conditions. Cox regression analysis was used to identify the variables associated with infection. Survival studies were carried out with the Kaplan-Meier method.

Results: Among the total, 53.1% and 27.3% of patients developed infection during early and intermediate postoperative periods respectively. During early postoperative period; 40.6% of patients had Bacterial infections, 7% Fungal infections and 5% CMV . During intermediate postoperative period; 18.7% of patients have Bacterial infections, 4.7% Fungal infections and 3.9% CMV and HCV recurrence was universal. By end of study 65..6% of patients were alive and 34.6 were dead and infectious problems were present in 38.6% of deaths. All the infections decreased survival. Multivariate analyses identified: SBP, plural effusion, MELD score, preoperative bilirubin level, long usage of indwelling devices (CV and urinary catheters), long ICU and hospital stay, operation time, reoperation, immunosuppressive level and frequent pulse steroids risk factors for infections but the multivariate analysis identified no variables that independently increased the risk of developing this infection.

OP-04

HCV Recurrence in Adult Living Related Liver Transplantation (LRLT): Results from Single Center

Ibrahim Mostafa, Rasha Refay , Wael Safwat, Medhat Abd-El Aal , Mahmoud El Meteni, Alaa Hamza, Mohamed Fathy, Amr Abd -El Aal, Mohamed Bahaa , Hesham Abdel Kader, Magda Al Monayeri

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Abstract not available

OP-05

Recurrence of HCV (Genotype 4) Post Living Donor Liver transplantation for Egyptian Patients

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Abstract not available

OP-06

Recepients Complications of the Living Donor Liver Transplantation Progamme in King Hssein Medical Center

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Objective: To review the morbidity of the liver transplantation program in King Hussein Medical Center.

Methods: This is a retrospective review of 24 patients who underwent living donor liver transplantation from May 2005 to October 2007 in King Hussein Medical Centre.

Results: 24 patients underwent liver transplantation, only one of them was retransplanted, 17 patients were males and 7 were females with a mean age of 32 years, (the age ranged between 3 to 58 years).

12 patients had complications post-operatively with a morbidity rate of 46%, 8 had biliary complications (3 leaks and five strictures) of which 6 were treated with biliary stenting and one needed re-operation. 3

patients had acute rejection all of them were created with steroid successfully. One patient had incisional hernia; one had recurrent langerbanes histocytosis and one had minor brain infaret resolved uneventfully.

Conclusion: Although the age of liver transplantation in our center is around two years but day by day it is becoming a well established procedure.

The outcome of our center in performing living donor liver transplantation is encouraging.

OP-07

Management and Outcome of Biliary Complications After Living Donor Liver Transplantation

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Background: Herein we present our experience with both deceased donor Liver Transplantation (DDLT) and living-donor Liver Transplantation (LDLT).

Patients & Method: Between April 2001 and January 2008, 160 LT procedures were performed (106 DDLTs and 54 LDLTs) in 156 patients (4 re-transplants).

Results: Overall male/female ratio 92/64, adult/pediatric 142/14, and median age 43 years (range, 1.5 - 64 years). In the DDLT group; median operating time was 8 hours (range, 4-19), median blood transfusion was 6 units (range, 0-40), and median hospital stay was 14 days (range, 6-183). In the DDLT group; after a mean follow-up period of 866 days (range, 4-2452), the overall patient and graft survival rates was 87.7%. In the LDLT group; median operating time was 10 hours (range, 7-17), median blood transfusion was 4 units (range, 0-65), and median hospital stay was 15 days (range, 7-142). In the LDLT group; and after a mean follow-up period of 910 days (range, 8-1907), the overall patient and graft survival rates were 87% and 81.4% respectively. There was no significant difference in patient and graft survivals between both groups. Biliary complications were significantly higher in LDLT compared to DDLT, 27.8% vs. 3.7% respectively ($P<0.05$). Vascular complications were also slightly higher in LDLT compared DDLT, 7.4% vs. 4.7% respectively ($P>0.05$).

Conclusions: Both DDLT and LDLT are being successfully performed at KFSH&RC with good outcomes. Our early experience indicates higher rate of biliary and vascular complications in the LDLT group

OP-08

Prevention of Hepatitis B Recurrence Post Liver Transplant: Use of IM HBIG

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Background: hepatitis b tends to recur after liver transplant.

Liver Transplant is carried in the low risk group.

Ways to combat recurrence includes IV HBIG at high dose and long duration.

Some studies have shown similar success with IM smaller dose and oral Lamivudine, which we explored in our study population

Methods: 13 patients with living donor liver transplant with the diagnosis of hepatitis b ESLD were transplanted between 11/2004 till 8/2007. ALL except one patient were HBV DNA negative or < 2000 copies/ml at the time of liver transplant.

Most received Lamivudine before liver transplant

ALL were given HBIG, 800-1000 IU/day for 7-10 days immediately post transplant and continued with monthly IM, HBIG and Lamivudine, for one year.

HBIG was stopped after one year and continued with Lamivudine only

Results: 13 patients were transplanted for hepatitis B. Data for analysis is available on 9 patients who survived more than 3 months. Follow up from 6 months to 34 months.

ALL received HBIG IM in the first year with Lamivudine (HBsAb titer >100 iu/ml)

ALL 9 patients till now are HBsAg and HBV DNA negative with normal graft function

Conclusion: IM, HBIG and Lamivudine in the first year post liver transplant to prevent hepatitis B recurrence appears safe and effective.

Continuation with Lamivudine after the first year in this group is needed though the exact duration is unknown

OP-09

Surgical Management of Biliary Complications Following Living Donor Liver Transplantation

Hatem Khalaf, Khalil Alawi, Hamad Al-Bahili, Mohamed Al-Sofayan, Mohamed Al-Saghier, Yasser Kamel, Naglaa Allam, Ayman Abdo, Hamad Al-Suhaibani, Mohamed Al-Sebayel

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Surgical Management of Biliary Complications Following Living Donor Liver Transplantation Authors: Hatem Khalaf, Khalil Alawi, Hamad Al-Bahili, Mohamed Al-Sofayan, Mohamed Al-Saghier, Yasser Kamel, Naglaa Allam, Ayman Abdo, Hamad Al-Suhaibani, Mohamed Al-Sebayel. Institute: Department of liver transplantation and Hepatobiliary-Pancreatic Surgery, King Faisal Specialist Hospital and Research Center (KFSH&RC), Riyadh, KSA Abstract Introduction: Biliary tract complications continue to account for much of the morbidities seen after living donor liver transplantation (LDLT). Most of these complications are usually managed either through endoscopic or percutaneous manipulations. However, surgical reconstruction might be the only way forward after failure of all other conservative means. Patients & Method: Between Nov 2001 and Nov 2007, a total of 53 LDLTs were performed. Biliary anastomosis was duct-to-duct in 44 recipients and Roux-en-Y hepaticojejunostomy in 9 recipients. Biliary stents were not used in any of our patients. Five patients were excluded from the statistical analysis due to early patient or graft loss (within two weeks). Results: Fourteen out of 48 patients (29%) developed post-LDLT biliary complications. Out of the 14 patients, conservative management was successful in 5 patients (36%), one patient died from overwhelming sepsis, while surgical reconstruction was necessary in 8 patients (57%). Out of the 8 patients who underwent surgical reconstruction, 4 patients required double ducts hepaticojejunostomy, 3 patients had single duct hepaticojejunostomy, and in one patient surgical reconstruction was abandoned due to the intraoperative finding of hepatic artery thrombosis, therefore, percutaneous metallic stent was inserted postoperatively. Out of the 7 patients who underwent biliary reconstruction, and after a median follow period of 968 days (range, 1344 â€“ 690 days), 5 patients (72%) remained well with no recurrent biliary problems, two patient (28%) had recurrent anastomotic stricture that was easily managed by percutaneous stenting and dilatation. Conclusions: In our experience, biliary complications following LDLT are frequently resistant to endoscopic and radiological manipulations. In those patients who fail conservative management, surgical reconstruction becomes the best way forward with good long-term outcomes.

OP-10

A New Surgical Technique for Reconstruction of the Middle Hepatic Vein and its Tributaries in Adult LDLT

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Background: The hepatic venous reconstruction is one of the corner stone of adult LDLT. However problems associated with hepatic venous outflow remain to be an issue. The aim of this study is to present our new surgical technique for reconstruction of the middle hepatic vein and its tributariesin adult LDLT.

Patients and Methods: Between August 2004 and December 2007 we performed a total of 37 cases of LDLT that required reconstruction of the middle hepatic vein in 28 cases and reconstruction of V8 in 9 cases. Our surgical technique used a single orifice for anastmosis of the RHV and the middle heptic vein to the RHV of the recepient. Our technique involves either direct suturing of the RHV to the middle hepatic veiv (35 cases) or placing an interpostion vein patch in 2 cases.

Results: Immediate and longterm follow up using Doppler ultrasound revealed no complications related to hepatic venous outflow obstruction. Conclusion: Our surgical technique is well established for reconstruction of the middle hepatic vein and its tributaries and has contributed in overcoming hepatic venous outflow problems in LDLT.

OP-11

Biliary Reconstruction and Complications Encountered in 23 Living Donor Liver Transplantation

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Summary Background Data: Biliary complications appear to be the leading cause of postoperative complications after living donor liver transplantation (LDLT). The aim of this study is to analyze the complications, treatment modalities, and outcomes of biliary anastomoses in a series of 23 consecutive LDLTs.

Patients and Methods: Between February 2003 and December 2007, 24 patients underwent 23 LDLTs. Of these 23 allografts, 22 were right lobes and 1 was left lobe. Nine grafts (39%) had a single duct for anastomosis, 11 (48%) had two bile duct orifices, and 3 grafts (13%) had three bile duct orifices. Biliary reconstruction was achieved with Roux-en-Y choledocojejunostomy in 6 patients (26%), and duct-to-duct choledococholedochotomy in 17 patients (74%). Height of 24 patients died, resulting in an overall patient survival rate of 67%. Median follow-up time was 24 months (range, 2 to 57 months).

Results: The overall incidence of biliary anastomotic complications was 30% (7 patients) in this series. In the Roux-en-Y choledocojejunostomy group (n=6), 3 patients developed anastomotic leaks (50%), resulting in 2 bilomas drained percutaneously without complications, and 1 death after biliary peritonitis. There were no strictures in this group. In duct-to-duct choledococholedochotomy group (n=17), 4 patients developed anastomotic strictures (23.5%). There was no leakage in this group. Three of these 4 strictures were managed by percutaneous transhepatic biliary drainage. Two of them died of septic complications (acute cholangitis and pulmonary infection), and one developed a biliothorax, drained percutaneously without complications.

Conclusions: Duct-to-duct choledococholedochotomy showed a higher incidence of stricture. Because of greater physiologic bilioenteric continuity, less incidence of leakage, duct-to-duct reconstruction represents a feasible technique in LDLT. To prevent further mortality from percutaneous transhepatic biliary drainage, anastomotic stricture must be initially managed with endoscopic techniques.

OP-12

Outcome of Donors in Living Related Liver Transplantation: Experience at the Royal Medical Services

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The evolution of liver transplantation in Jordan has been quite different from its evolution in Western countries. Traditional, religious, emotional, and historical issues have presented long-standing obstacles to cadaveric liver transplantation.

Objectives: to evaluate the donor hepatectomy done for living related liver transplantation.

Method and Materials: During the period June 2004 until January 2008, 26 live related liver transplantations were performed in king Hussein medical centre, one patient had a retransplantation .We evaluated 67 candidate for donation,(23 female,44 male),age ranging between 19 to 41 years. Of 67 candidates 50 were excluded due to serological and anatomical abnormalities, inadequate liver volume, high fat percentage, or having 2nd thoughts about donation.

The donors in our centre undergo meticulous protocol of investigations and evaluations pretransplantation including; biochemical and serological tests, liver CT angiogram and volumetry and MRCP, cardiology, endocrine, nephrology, respiratory and psychiatric consultations.

27 hepatectomies were performed successfully (19 males, 8 females). The resections were; 17 right lobe without middle hepatic vein (MHV), 5 with (MHV), 4 left lobes, and 1 left lateral lobe.

The relationship between donors and recipients was as follows; 9 sons, 4 sisters, 5 brothers, 3 wives, 4 mothers, 2 fathers, and 2 nephews.

Results: The resection was done without Pringle's manoeuvre in 19 cases and in 8 with intermittent occlusion. The intraoperative blood loss ranged from 50ml to 1500ml with an average 400ml and intraoperative blood transfusion was required for 1 donor only. The average operative time was 4.5(3.0-6.0) hours. Mortality rate was zero, and morbidity rate 40% which was classified according to Clavien classification: 9 experienced grade I complication(2 pleural effusion;1 jaundice which resolved spontaneously , 2 required blood transfusions, 2 sub capsular haematomas, and 2 wound infection). 1 experienced grade II (pneumothorax treated by chest tube). 1 experienced grade III (incisional

hernia). None had grade IV or grade V complication. The average hospital stay was 5 days for left lateral segmentectomy 7 days (5-12) for lobar donation.

Conclusions: Effective and meticulous selection protocols are a prerequisite for a safe donor hepatectomy in living related liver transplantation which will result in safe outcome.

OP-13

Highlights in Anesthetic Management in Liver Transplant (Recipient& Donor) in KHMC

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In the last two and a half years 27 liver transplants were performed in KHMC .for 27 recipient patients 20 males, 7 females whose age ranged between 3-57 years. Indication for liver transplant will be revealed in this talk. I will discuss the pros and cons in recipient & donor patients in the following stages: Pre-operative assessment and preparation. -Clinical assessment -Lab test interpretation -Advanced multi subspecialty assessment. Intra operative anaesthetic management in the different stages of recipient liver transplant. And donor patients -Induction of anaesthesia -Maintenance of anaesthesia -Monitoring of patients -Warming patients and rapid infusion system. Intra operative complications and management for recipient and donor patients in different stages of surgery -Resection phase -UN hepatic phase-New hepatic phase. Recovery from anaesthesia and post operative pain management. -Pain-free patients -normothermic patients -Nausea and vomiting free - extubated and spontaneous breathing patients whenever possible. In conclusion anaesthetic management for recipient liver transplant and donor is a challenging, exciting, a team work task .

OP-14

Simultaneous Combined Liver And Kidney Transplantation

Sameer Smadi, A Zyadat, S Halasa, I Ghazzawi, S Al-Qusous, A Edwan, M Ghatashah, K Ajarmeh, Ali Obeidat, W Obeidat, Y Yuzar, Y Tokat, Basma Zoubi, Kafa Qaisi

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Primary hyperoxaluria type 1 (PH1) is a rare inherited metabolic disorder in which deficiency of the liver enzyme AGT leads to renal failure and systemic oxalosis. Timely, combined cadaveric liver-kidney transplantation (LKT) is recommended for end-stage renal failure (ESRF) caused by PH1; however, the unavailability of cadaveric liver transplantation program in our Jordan has generated enthusiasm for living-related transplantation to this patient. We present a sisters-to-brother simultaneous LKT in a 22 years old male patient who suffered from PH1 with end stage renal failure underwent successful combined liver-kidney transplantation(LKT).The patient received liver from one sister and kidney from the other sister.

Four months after transplantation, his daily urine oxalate excretion was decreased with normal liver and renal allograft functions.

In addition to the well-known advantages of living organ transplantation, simultaneous LKT may facilitate early postoperative hemodynamic stability and may induce immune tolerance and allow for low-dose immune-suppression.

OP-15

The Role of Mild Hypothermia in Protection Against Ischemia/Reperfusion Injury in Bilharzial Livers: Controlled Experimental Study

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Background: Ischemia reperfusion injury (IRI) is an important cause of liver damage occurring during hepatic resection for liver tumors, surgery for liver trauma and liver transplantation. This study evaluates the protective effect of mild hypothermia against ischemia reperfusion injury in bilharzial and non bilharzial hamster livers.

Methods: Forty hamsters were divided into four equal groups' bilrharzial normothermic (BN) (36.9 ± 0.3°C), bilharzial hypothermic (BH) (33.3 ± 0.1°C) , normal normothermic (NN), normal hypothermic (NH) and two equal control groups of normal and bilharzial hamsters. The four main groups were exposed to 30 minutes of liver ischemia followed by four hours of reperfusion. All animals were

sacrificed. Livers sent for histopathological studies, blood samples for aspartate aminotransferase (AST), alanine aminotransferase (ALT) measurements and blood sugar.

Results: Histopathological evaluation confirmed severe hepatic injury in normothermic bilharzial and normal hamsters, while hypothermic bilhrazial and normal hamsters only experienced mild to moderate hepatic damage. Markers of hepatocellular injury (ALT and AST) and blood sugar were lower in the hypothermic groups than in the normothermic groups but it was statistically insignificant. Conclusion: Mild hypothermia significantly reduces hepatic injury in both normal and bilharzial livers in animals subjected to ischemia reperfusion injury. The hepato-protective effects of mild hypothermia were confirmed by elevated levels of proliferating cell nuclear antigen (PCNA) and vascular endothelial growth factor (VEGF) in hypothermic groups than in normothermic groups.

OP-16

Pan Arab Liver Transplant Web-Based Registry

Shazia Naz Subhani

King Faisal Specialist Hospital and Research Center, Riyadh, KSA

Given that Liver Diseases is becoming a common problem in Saudi Arabia, a web-based registry for Liver Transplantation was designed and implemented for use in March 2007 in King Faisal Specialist Hospital & Research Center (KFSH&RC), Riyadh, KSA. The registry was designed with the goal in mind to provide information on the extent and nature of liver transplantation and specific types of LT complication.
Methods: The registry has 3 main phases: Phase I: User trainings, data acquisition and entry from King Faisal Specialist Hospital & Research Center, Riyadh, KSA. Phase II: Collaboration invitations, user trainings and data entry from concerned hospitals within the Kingdom of Saudi Arabia. Phase III: Collaboration invitations, user trainings and data entry from concerned hospitals of Pan Arab countries Using a secured login module, data can easily be registered in the web-based registry database which is residing on a secured, centralized web-server. The key feature of the registry is the availability of live patient data for patient related query, which was made possible by establishing a direct connection (ODBC) with the SQL Server database. The registryâ€™s centralized data with various fundamental functionalities like tabular reporting, searching, charts etc. allows the researchers and administrators to query the database for their data of interest and to get the instant results for immediate action. Tabular and graphically compiled Information on liver transplantation related complications are available with a click of a button within the web based registry software, allowing the doctors and researchers to access the magnitude of liver problems on the national level.

Results: Liver Transplant registry is the first of its kind in the Middle Eastern Arab countries that will offer an anytime-anywhere access to the registry data due to its functionalities, thereby, removing the geographical boundaries and allowing the registry extension on regional / international level. Phase I of the registry has been successfully completed, and is prospectively progressing in terms of new data entry. Phase II was started by initiating collaborative invitations to the concerned hospitals of KSA. In this regard negotiation is on-going with Military Hospital, Riyadh. As an action plan for Phase III, doctors from Wady Al-Nile Hospital, Egypt, have already been trained on the usage of the registry software and their collaboration in terms of data entry has been prospective since September 2007.

Conclusions: The use of Internet Pan Arab Liver Transplant Registry (http://rc.kfshrc.edu.sa/ltr/), where all the data is centralized and dynamic, helps the physicians and other healthcare professionals about continuous insight information of the disease and the medical care dynamics. This helps in reporting the statistics and highlighting the problem areas for the action plan. This action plan may include the availability of various drugs in the dispensaries, preparations of national guidelines for the treatment of liver transplant patients and preparation of training and educational programs for improving the life style of people.

OP-17

Cadaveric Organ Donation in the Arab World: Past, Present and Future

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Aim: Organ transplantation is the only hope for cure in many patients suffering from end stage organ

failure; and the sever organs shortage remains the main limiting factor in treating those patients. Despite the increasing need of organs transplantation in the Arab World, some countries does not yet have neither cadaveric nor living donor transplant programs. Although live organ donation has been recently introduced in some of the Arab countries, however, cadaveric organ donation remains the best way forward to meet the increasing demand in the Arab World. The aim of this study is to explore the current status of organ transplantation and donation in the Arab world in term of organ availability as well as legalization of cadaveric & living donors.

Materials & Method: Most Arab coubtreis were included in this study, and data was collected though personal communnication, phone calls, e-mails, and Internet search. The data included; presence or absence of laws regulating organ donation, presence or absence of organ transplant centers, type of organ transplant procedures (living or cadaveric), number of organ transplants, and finally the population of each country.

Results: Out of 20 Arabic Countries* we found out that: 5 COUNTRIES with 34,400 million populations does not have any transplantation program 9 COUNTRIES with 71,700 million populations have both Cadaveric and Living transplant programs 3 COUNTRIES with 44 million populations have Living Transplant Programs & cadaver as law only 3 countries with 139 million populations have Living Transplant programs but unfortunately do not have Cadaveric LAW up-to-today date. (Table 1)

Conclusion: The reasons of why high number of countries have NO Transplantation programs is due to the fact that there is a tremendous controversy over the subject of organ donation plus the problem they are facing in the legislation of cadaveric donation. As a result, most transplants in our Arab counties are being performed using live donors, since the law either does not permit cadaveric donation or has just permitted it lately. My own vision for the future of organ donation in the Arab countries need outstanding continuous effort to enhance the transplant legal structure, and to strengthen the Arab public concern about the serious shortage of organs, in addition to an allied efforts of all medical professional leaders and members who share the aim of having satisfied organ donation system in all ARAB countries.

OP-18

Use of the Native Liver Veins as a Source of Vein Grafts in Living Donor Liver Transplantation: Techhnique, Difficultles and Complications

Hossam Eldeen Soliman M.D., Tarek Ibrahiem., M.D., , Bassem Soliman, M.D., Maher Osman M.D., Omkaalthom Elhadad M.D., Ibraheim Salama M.D., Ibrahiem Marwan M.D

Background: LIVING DONOR liver transplantation is a good alternative in areas where cadaveric transplants. Variation of the hepatic veins and portal vein are important factor in determining suitability of grafts for living donation especially as regard donor safety and difficulty in outflow reconstruction due to the lack of suitable vein grafts. AIMS: We present our experience in vascular reconstruction of living donor transplants using vein grafts from the native liver of the recipient.

Paltients and Method: We had performed 39 living donor liver transplantation in the department of Surgery, National Liver institute, Menoufia University starting from 28th of April 2003 to the end of September 2007. They 16 pediatric patients and 23 adult patients. We reviewed the preoperative patients data, graft characteristics, operative data, postoperative details including hospital stay, the in-hospital complications and early follow. And accordingly, we excluded 7 patients with tumors and two patients with portal vein thrombosis.

Results: There were one case of use of portal confluence for reconstruction of double portal veins in left lobe group graft in pediatric cases. While in right lobe grafts we used vein grafts in 13 out of 16 patients. We tried to minimize the number of hepatic veins to a maximum of two anastomsies by this technique. Long grafts were obtained from the portal system and the hepatic veins in reconstruction of V5 in 4 patients, V8 in 2 cases, middle hepatic vein in 5 cases, inferior hepatic vein in 2 cases and anterior patch for the right hepatic vein in 8 cases. In one case we used a canalized umbilical vein to reconstruct two inferior veins in one patient. In one case the long grafts were thrombosed postoperatively but the rest were functioning postoperatively. CONCLUSIONS: The native liver of the recipient is a good source for vein grafts in livind donor liver transplants in absence of portal vein thrombosis and malignancy.

OP-19

Hepatic Artery Thrombosis after Activated Factor

VII Use in LDLT

Anwar Jarrad, Abdullah Al Bashir, Muaweih Ababneh, Refa'at Shehab, Sa'eb Hammoudi, Hani Abu Ghosh

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Background: Activated Factor VII can cause dramatic cessation of bleeding. We used Activated Factor VII in a patient after Living Donor liver transplant. This patient also has end stage renal disease on hemodialysis. He bled massively and failed to control the bleeding except with the use of Activated Factor VII.

Case Description: A 16 years old man with history of end stage renal disease on hemodialysis due to Oxalosis.

He underwent LDLT from his mother. Hospital course was complicated by " fecal" peritonitis and abdominal exploration was carried without an identifiable source of leak or perforation.

Later he developed bile leak. Endoscopic Biliary stenting was carried out with correction of the leak and drainage of the biloma.

He presented almost 80 days post transplant with recurrent massive upper GI bleeding without an identifiable source to explain that.

Gastroscopy revealed the stomach fundus was bleeding from the surface but no visible vessel could be seen and Argon Plasma Coagulation was applied, three days later he bled from the sphincterotomy site and was controlled but bleeding recurred massively two days later and no source can be identified,. Standard supportive treatment was tried without success, so activated factor VII was used as a life saving measure and bleeding stopped to recur after 48 hours massively, so another time it was used and the bleeding stopped.

Two days later he spiked temperature and looked suck, and he was started on antibiotics. Ultrasound revealed big liver collection, and liver enzymes were in the thousands.

Work up revealed hepatic artery thrombosis and Percutanous drainage was tried but no material came out and an exploration laparatomy has failed due to severe adhesions and massive bleeding from the incision.

The patient was continued on supportive care and died after 2 days.

Conclusion: use of Activated factor VII was not reported in the setting of liver transplant. This case ended with disaster consequences while trying to stop the bleeding.

Activated Factor VII might be unsafe in the setting of liver transplant

OP-20

Living Related Liver Transplantation for Hepatocellular Carcinoma in Egypt: Going Beyond Milan Criteria

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OP-21

Use of the Native Liver Veins as a Source of Vein Grafts in Living Donor Liver Transplantation: Technique, Difficulties and Complications

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Cairo, Egypt

Background: LIVING DONOR liver transplantation is a good alternative in areas where cadaveric transplants. Variation of the hepatic veins and portal vein are important factor in determining suitability of grafts for living donation especially as regard donor safety and difficulty in outflow reconstruction due to the lack of suitable vein grafts. AIMS: We present our experience in vascular reconstruction of living donor transplants using vein grafts from the native liver of the recipient.

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Conclusion: The native liver of the recipient is a good source for vein grafts in livind donor liver transplants in absence of portal vein thrombosis and malignancy.

OP-22

Auxiliary liver transplantation for acute liver failure in children

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The aim of this paper is to presents our 15 years experience of children transplanted with auxiliary grafts for acute liver failure (ALF).

Patients and Methods: From 1990 to the present, 126 liver transplants were performed in children presenting with ALF. Of 126, 16 (11 male and 5 female) received cadaveric auxiliary grafts. The median age was 12 years (range: 2.3 -16). The main indication for transplantation was Non-A Non-B hepatitis (NANB) in 11, drug induced in 2, one autoimmune, one idiopathic and one for mushroom poisoning. All children were super-urgently listed for liver transplantation after fulfilling criteria of ALF. The median waiting time for transplantation was 4 days (range 1-18).After partial hepatectomy of native liver, 16 grafts were implanted orthotopically: 8 right lobes, 5 left lateral segments, 2 left lobes and one whole liver. Regeneration of the native liver was assessed by radiological, nuclear medicine scan and histological investigations. Follow up scans and biopsies were done at intervals of 3 to 6 months and yearly. Results: Patient and graft survival was 81.3% at 1, 5 and 10 years respectively. Of 16, there were 3 deaths at a median of 9 days (range 8-52) post transplantation. There was one retransplant for chronic rejection 15 months post transplants. There were no biliary or vascular complications. Thirteen (82%) children are well and alive with a median follow-up of 113 months (range 47-164). Of 13, 7 (53.8%) were successfully withdrawn from their immunosuppression at a median time of 30.5 months (range 17-103) post transplantation. Two children had graft necrosis post withdrawal and required graft removal. Conclusion: Auxiliary liver transplantation is a successful procedure and should be considered in selected group of children presenting with ALF. However it is technically demanding and should be performed in experienced centres. It is the only available procedure which leaves the opportunity to stop immunosuppressive therapy once the native liver has regenerated.

OP-23

One Hundred Thirty-three Liver Transplants in Children: Riyadh Military Hospital Experience

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Liver transplantation is now done routinely in children for a variety of etiologies leding to end-stage liver disease.Liver transplantation at Riyadh Military Hospital has established as the only exclusive pediatric program in the region. Authors have reviewd their experience since the inception of the program.Between November 1998 and December 2007 one hundred and thirty-three cases have been performed. The age range was 4 months to 14 years. Progressive familial intra-hepatic cholestasis was the most common indication. All children, except one, receieved allograft from living donor. Six auxiliary transplants were done. The incidence of major vascular complications was 8%. The major biliary complications have been 4 biliary strictures and 3 bile leaks. Thirteen children have died. Two further grafts have been lost. Thus the patient and graft survival rates are 90% and 88% respectively. Liver transplantation is a viable option in children with end-stage liver disease. The morbidity and mortality of the pediatric liver transplantation program at Riyadh Military Hospital is low. Expansion of the program and better result is anticipated in the future.

OP-24

Pediatric living donor liver transplantation (PLDLT) in Riyadh Military Hospital; donor experience and outcome

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Paediatric living donor liver transplantation (PLDLT) in Riyadh Military Hospital; donor experience and outcome ABSTRACT Aim: The purpose of this study is to evaluate experience of living liver donors in Riyadh Military Hospital, KSA. Methods: A retrospective review of the data of 133 living donors, who donated part of their liver in the period between November 1998 and January 2008 in Riyadh Military Hospital, KSA, was carried out. Data was collected regarding their age, sex, evaluation procedure, type of procedure and complications. Results: A total of 133 paediatric living donor liver transplantation (PLDLT) were done, 79 of donors were males and 54 females. Their age ranged between 18 and 48 years. Evaluation was carried out using multidisciplinary approach to select physically healthy and mentally sound donors. 131 donors had Lt. lateral segment donation (Seg. 2&3), one who had full Rt. Lobe donation and one had full left lobe donation There was no mortality among the donors. The morbidity was minimal and included 3 cases of biliary leakage, one case of incisional hernia and one case of intestinal obstruction. Conclusion: Liver resection in a healthy living donors, after meticulous evaluation, is a save procedure. It is being done at RMH with no mortality and minimal morbidity. With growing experience, the evaluation, operative technique and post-operative course have become a routine and safe procedure for the living donors.

OP-25

Laparoscopic Living Donor Left Lobe Liver Harvesting In Pediatric Liver Transplantation (Initial Results)

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Objective: Reporting our initial experience in laparoscopic left lobe harvesting in pediatric living donor liver transplantation with the analysis of perioperative donors' morbidities in an attempt to judge the feasibility of this technique.

Patients & Methods: From May 2005 to September 2006 we performed 5 pediatric LDLT using left lobe grafts harvested laparoscopically. Our patients were 5 females with ESLD as a consequence of biliary atresia, 4 of them had undergone Kasai operation. The median age of the children was 12.2 months (range 9-18 months) and the median weight was 7.61 Kg (range 6.13 – 9.07 Kg). The donors were 3 mothers, one father and one grandmother with a median age of 33.4 years (range 25-46 years) and a median BMI of 22.6 (range 19-27).

Results: The donors' operations were completed laparoscopically in the 5 cases with no conversion to open technique. The median operative time was 402 minutes (range 353-520 minutes) with no major intra-operative events. The harvested left lobes were in a good anatomical and morphological condition with absence of vascular or biliary anomalies except for 1 case with double bile ducts which necessitated double biliary anastomoses. We had no donors surgical postoperative complications with a median hospital stay of 8 days (range 6-14 days). The median graft weight was 278 gm (average 210-340gm) and the median cold ischemia time was 124 minutes (90-200 minutes) with excellent function of the grafts. However one child had 2 reinterventions (one due to secondary hemorrhage and the other for anastomotic biliary fistula).

Conclusion: Laparoscopic left lobe harvesting in pediatric LDLT is feasible with excellent donors' outcome, less pain and improved postoperative symptoms. The combination of extended experience in hepatic surgery especially living donor harvesting and advanced laparoscopic techniques is mandatory to initiate such a program.

OP-26

Biliary reconstruction in pediatric living-donor liver transplantation: comparison of different techniques in 30 recipients

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Objective: To assess the incidence of biliary complications after pediatric living-donor liver

transplantation (LDLT) in patients undergoing duct-to-duct choledochocholedochostomy or Roux-en-Y choledochojejunostomy reconstruction.

Summary Background Data: Biliary tract complications remain one of the most serious morbidities following liver transplantation. No large series has yet been carried out to compare the 2 techniques in LDLT especially in pediatrics. This study undertook a retrospective assessment of the relation between the method of biliary reconstruction used and the complications reported.

Methods: Between November 2001 and February 2008, 30 patients underwent LDLT. Biliary reconstruction was achieved with Roux-en-Y choledochojejunostomy in 13 patients, and duct-to-duct choledochocholedochostomy in 17 patients. The number of graft bile duct and anastomosis, mode of anastomosis, use of stent tube, and management of biliary complications were analyzed. RESULTS: The overall incidence of biliary complications was 23.3%. The respective incidence of biliary leakage and stricture were (0/13) 0% and (3/13) 23% for Roux-en-Y, and (2/17) 11.7% and (2/17) 11.7% for duct-to-duct reconstruction. Duct-to-duct choledocho choledochostomy showed a slightly lower incidence of biliary complications. All of our strictures in the bilio-enteric group were managed radiologically. Endoscopic management was successful in one patient in the duct to duct group, however endoscopic management of these strictures was not that easy in children especially small babies.

Conclusion: The authors found a slight increase in the biliary stricture rate in the Roux-en-Y choledochojejunostomy group which contradicts the general belief of a lower complication rate with this type of biliary reconstruction in pediatrics. The authors also found that strictures in Roux-en-Y are perfectly well managed with the endoscopic treatment. Still the number of patients is not enough to draw any statistically significant conclusions.

OP-27

Using Marginal right Lobe Living Liver Donors: Safety of Expanding the Margins

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In Turkey, living donor liver trnasplantation (LDLT) has evolved because of organ shortage. Despite efforts in expanding the live donor pool, adult-to-adult LDLT has yet to significantly impact donor shortage. However, expanding donor selection criteria without compromising donor or recipient safety is a challenge.

We have retrospectively examined initial 71 consecutive right lobe living donors and their recipients and analyzed those donors with marginal donor criteria (defined as having a calculated remnant liver ratio <30, or a BMI ≥30, or being older than 55 years, and compared with non-marginal donors. There were 19 patients in marginal donor group and 52 patients in non-marginal donor group. Complication rates for marginal and non-marginal donors were eq% vs. 6%, respectively. Most common complications in marginal donor group were prolonged hyperbilrubinemia (n=2) and biliary stricture (n=2). None of donors had mortality or life-threatening complications. Average hospital length of stay was significantly higher for marginal donors. Maximum AST, ALT, total bilirubin levels at first postoperative week were significantly higher in marginal donors. For marginal donor liver recipients, only maximum AST levels at first postoperative week were higher. Maximum INR levels in recipients and donors in both groups did not show any difference.

Our results suggest that the range of medically or surgically marginal living-liver donors may be safely expanded to some extent when there are no other alternative donors. Use of marginal donors did not affect outcomes of respective recipients.

OP-28

Chylous Ascites after Living Donor Liver Transplantation

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Background: Ascites can occur after liver transplantation in the early period till portal hypertension and other etiologies resolve. We report here two cases of Chylous ascites that happened after almost a month from the transplant date.

Case summary: two patients had LDLT, the first is a child aged 10 years who had LDLT for PSC and

he got left lateral segment from his mother. His post operative course was uneventful and the surgical drains were removed after two weeks, but he presented after one month with ascites which was symptomatic, upon drainage it was milky in color and investigations revealed Chylous ascites. A paracentesis for three times controlled the ascites and disappeared.

The second case was a 53 years old woman who had LDLT from her brother for ESLD secondary to PBC, after removing the surgical drains; she presented after 5 weeks from the transplant date with ascites which turned to be Chylous and disappeared after paracentesis twice

Conclusion: Chylous ascites is a rare cause of ascites after liver transplant. It occurred after one month from the time of liver transplant and it disappeared spontaneously. It is noteworthy that the two cases are of the cholestatic verity probably to hilar dissections with bigger than usual lymph nodes in theses situations

OP-29

Outcome Of Donors in Living Donor Liver Transplantation (Lrlt): 180 Donors from Single Center

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Abstract not available

Poster Presentations

PP-01

Evaluation of 368 Living Realted Liver Donors: Single Center Experience

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Background and Aims: Organ shortage has been the ongoing obstacle to expand liver transplantation world-wide including Saudi Arabia. Living donor liver transplantation (LDLT) was hoped to improve this shortage. The aim of the present study was to analyse the results of the evaluation for a large pool of potential living donors at our center. Methods: From April 2001 to June 2007, a total of 44 living donors liver transplantation were performed at our institution (37 patients had a right lobe, 1 had a left lobe and 6 had left lateral grafts). 368 potential donors were worked up according to a step-wise evaluation protocol. Their age ranged from 18 to 60 years, with 75% in the third and forth decades. Female: male ratio was 77: 291. They were all first and second degree relatives of the patients. Results: Only 44 (11%) were accepted for donation and 324 (89%) were rejected. 37% were excluded either at initial screening due to high body mass index (15%), or in the first step of evaluation due to incompatible blood group (3%), positive hepatitis serology (7%),elevated liver enzymes (12%). 6% were rejected due to miscellaneous systemic diseases. In 13% of cases, the evaluation was aborted due to recipient conditions and in 5% because of socioeconomic reasons. 20% were rejected because of abnormal anatomy and 5% due to insufficient volume as determined by CT volumetry. In 14%, abnormal histopathology primarily abnormal fat content was the reason for rejection. Liver density was estimated by CT imaging before liver biopsy and the results were in agreement with the finding of steatosis (i□« agreement=29.2, p=0.001). Conclusion: There is no doubt that LDLT has helped in alleviating the severe shortage of cadaveric organs in Saudi Arabia. However suitable living donors are not easy to find especially right lobe donors. Our initial evaluation is effective in eliminating a large number of unsuitable donors. However, the donor evaluation process indeed remains to be a large burden on the resources of our program. Estimation of liver density by CT is useful since marked hypodensity would imply significant steatosis and hence avoid unnecessary biopsy.

PP-02

A Ruptured Liver in the 2nd Day After a Cadaveric Transplant:A Case Report and Literature Review

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Introduction: Ruptured liver after liver transplant is a very rare but serious complication which can lead to graft and patient loss. Very few cases are reported and most were ruptured subcapsular hematomas. Some of these cases were secondary to invasive procedures like liver biopsies or percutaneous transhepatic cholangiograms Case report: A 58 y old male patient underwent a cadaveric liver transplant for hepatitis B virus related cirrhosis. The donor was a 38 y old male patient who had multiple injuries. There were no obvious injuries involving the liver during procurement except for multiple petechiae on the surface of the right lobe of the graft that appeared only after aortic canulation and preservative solution infusion. The transplant procedure it self was uneventful and only two units of packed red blood cells transfused without other blood products. The patient recovered quickly and was extubated on the first post operative day. On the second day the patient developed severe hypotension and circulatory failure and was operated upon. A deep long laceration in the right lobe was found separating the anterior and

posterior sectors. Massive blood product transfusion was needed. Homeostasis was extremely difficult and partial right lobe resection needed to control bleeding. The patient recovered and was discharged two weeks after the transplant. The only long term complication was a biliary stricture which so far did not require ant intervention. Conclusion: In a trauma organ donor the presence of petechiae on the surface of the graft may indicate a high energy impact and intrahepatic hematoma may be present. Such hematoma may rupture following implantation and cause severe bleeding or graft and patient loss. Very few cases are reported. The exact incidence is unknown. Controlling the bleeding could be extremely difficult if the hematoma ruptures.

PP-03

Applicability of Living Donor Liver Transplantation (LDLT) in Eghpt

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Living Donor Liver Transplantation (LDLT) represent the only solution for patients with end stage liver disease in Egypt. Data on the applicability of LDLT for recipients in Egypt is scarce. Aim: is to investigate for the applicability of LDLT for recipients presented to our center & to identify causes of exclusions. Methods: From June 2004 to May 2007, 110 recipients were evaluated, 27/110 (24.5%) recipients presented without donors and 102 live donors represented for 83 recipients were evaluated. Causes of exclusion of donors and recipients were retrospectively evaluated. Results: 13 recipients underwent LDLT & 9 recipients transplanted in another center (total cases transplanted 22/110 (20%)). out of the 80 excluded live donors 24 (30%) donors excluded for donorâ€™s reasons; 14 (17.5%) donors excluded at step1, 4 (5%) excluded due to inadequate volume or unsafe anatomy, 1 (1.25%) is excluded due to psychiatric invalidity and 5 (6.3%) excluded due to hepatitis or steatosis in liver biopsy, another 56 donors (70%) excluded due to recipientâ€™ causes; unfitness for LDLT 23/83 (27.7%) and drop from list 23/83 (27.7%). Conclusion: Applicability of LDLT for recipients in Egypt is low (20%). 2- Establishing of Deceased Donor Liver Transplantation program in Egypt is mandatory.

PP-04

Liver Transplantation for Hepatoblastoma: A Single Centre Experience

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The purpose of this study is to review our experience of 25 liver transplants for hepatoblastoma from October 1993 for date. Hepatoblastoma is the most common malignant liver tumour in early childhood, it presents in children younger than 3 years of age and accounts between 60 and 85% of all hepatic tumours in children. Material and methods: From October 1993 to February 2007, 25 liver transplants were performed for hepatoblastoma. Of these 25, 18 (12 male and 6 female) children received cadaveric grafts with a median age of 2.5 years (range: 0.5 - 10) and 7 (5 male and 2 female) received left lateral segments from living donors (median age 2 years; range 0.9-11). Of 18 children who received cadaveric grafts, 6 received reduced grafts, of which four were left-lobe, one right-lobe and one left lateral-segment graft, respectively. Nine children received split cadaveric grafts, of which 8 were LLS and one right lobe, respectively. Three children received whole cadaveric grafts. Fifteen patients were PRETEXT IV (11 for cadaveric grafts and 4 for LRLT) and 10 were PRETEXT III (7 cadaveric grafts and 3 LRLT graft). Preoperative chemotherapy was given according to the protocols SIOPEL I in the first 3 patients, SIOPEL II in 6, SIOPEL III in 10 and SIOPEL IV in 3 patients. Postoperative chemotherapy was given in all except three. Results: Patient and grafts survival after cadaveric transplantation was 91%, 77.6% and 77.6% at 1, 5 and 10 years respectively with no retransplants. Patient and graft survival for LRLT children was 100%, 83.3% and 83.3% at 1, 5 and 10 years respectively. All surviving children, but one remain disease free with a median follow up of 6.8 years (range 0.9-14.9). Of 25 children, there were 5 deaths at a median of 13 months (range 3 weeks-28 months) post transplantation secondary to tumour recurrence (4) and respiratory failure (1). Conclusion: Liver transplantation is an established treatment for unresectable hepatoblastoma confined to the liver following chemotherapy. LRLT is a practical therapeutic option given that the outcome is similar to that of resection and cadaveric transplantation.

PP-05

Biliary Atresia-Polysplenia Syndrome: Clinical Spectrum and Surgical Implications in Liver Transplantation

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Biliary atresia is the second most common indication for pediatric liver transplantation in our unit .Biliary atresia is known to be associated with polysplenia syndrome in about 10%cases. The polysplenia syndrome anomalies may increase operative difficulty during liver transplantation. We present our experience of liver transplantation in three children with this anomaly. All patients had biliary atresia, polysplenia, interrupted inferior vena cava,midgut malrotation and anomalous hepatic artery arising directly from aorta. One patient also had hypoplastic portal vein, solitary kidney and left sided liver. All patients underwent living donor left lateral segment liver transplantation. Surgical technique was modified according to complex anatomical anomalies. On follow-up, the patients are doing well with satisfactory allograft function .Biliary atresia-polysplenia syndrome is a spectrum of anomalies. Patients with biliary atresia should be evaluated systematically pre- and peroperatively for these anomalies. Liver transplantation can be done in these children successfully with modifications in the standard surgical technique.

PP-06

Is there a role for nuclear imaging with HIDA scan in post-liver transplant recipients?

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Background and Aims: Biliary complications are common in post-liver transplant recipients. This study aimed to assess the value of HIDA scan in the detection of early post-liver transplant biliary complications.

Methods: From April 2003 till June 2006, 34 liver transplant recipients; mean ±SD age: 40.0±15.7 years; 25(73.5%) were males; 20(58.8%) received organs from deceased donors and 14 (41.2%) from living-related donors; underwent HIDA scan using a single head gamma camera Meridian (Philips) after intravenous administration of 185 MBq Tc-99m Disofenin. The mean±SD transplant-HIDA interval was 14.6±18.2 days (range 0-74). Results were compared with standard methods namely ERCP, MRCP, PTC, and/or liver biopsy.

Results: A total of 28 abnormalities were detected by HIDA scan in 16 patients (47.1%). Ten patients (29.4%) had biliary leak, 4(11.4%) had biliary obstruction or cholestasis, 1(2.9%) had delayed uptake, 5 (14.7%) had delayed blood pool clearance, and 8 (23.5%) had delayed transit to bowel. HIDA scan complications were more in post living-donor recipients compared to deceased-donor recipients, although it did not reach statistical significance (p=0.066). Total and direct bilirubin were significantly higher in patients with abnormal HIDA scan compared to those with normal HIDA 9p=0.011 and p=0.040 respectively). The sensitivity and specificity of HIDA scan in the detection of overall post-operative complications was 61.9% and 61.5% respectively. Biliary leak detected by HIDA scan was false positive in 7 out of the 10 patients, and was true positive in 3 patients only. Detection of obstruction was 75% sensitive by HIDA scan.

Conclusion: HIDA scan is a relatively non-invasive and reliable modality to start with for exclusion of early post-liver transplant biliary complications. However, correlation with the clinical status and imaging modalities is essential to confirm the abnormalities detected by HIDA scan.

PP-07

MORAL AND ETHICAL ISSUES IN LIVER TRANSPLANTATION IN EGYPT

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The non-acceptance of brain death criteria in Egypt meant that, only organs acquired from live donors could be used. Objective: to highlight the ethical issues caused by living related liver transplantation (LDLT) in Egypt. Methods: research ethics consultation that involved collaboration between physicians , religion scholars and clinical ethicists. Results:The first successful LDLT in Egypt was in the National Liver Institute in 1991, however, this program did not continue because of poor early results. In August 2002

, the program was revived at Dar-Al-Foaud Hospital ; since then almost 500 cases of LDLT were performed in 9 centers . In Egypt, liver donors are restricted to relatives up to third degree or spouse . The donor must be competent, meaningfully informed, able to reiterate the risk and benefits for both donor and recipients, and the alternatives available, willing to donate, with no evidence of coercion. Although the donor risk is estimated to be low, there were 2 reported donor deaths (0.4%). To not violate the principal of physician do no harm requires extraordinary proof that such a procedure is required, The ethical principle that should best be applied to LDLT is that of equipoise and informed consent or understanding, not primum non nocere, as the donor derives emotional benefit from donation and the opportunity to save a life. It is important to stress that the alternative to living-donor liver transplantation in Egypt is not deceased-donor liver transplantation ; there are no doubts that this is a beneficial procedure for the recipient with acceptable risks to the donor. Conclusion: In absence of law that permits cadaveric organ donation , it is ethically appropriate to perform liver transplantation using living donors . It is important to maintain the highest of medical and ethical standards to obtain maximum benefit for both donor and recipient

PP-08

Multidetector Computed Tomography (CT) Volumetry: Is it a Safe Method in Living Donor Liver Transplantation?

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Living related liver transplantation is used in treatment of the end stage liver diease. After resection and transplantation, impaired liver function in recipient and donor is caused by insufficient liver volume due to small for size. The reliable volumetric assessment of the hepatic lobes and segments of potential living donor is crucial.

Objectives: This study was conducted to compare the results of multidetector CT volumetry with the intraoperative findings in order to evaluate the safety of this method.

Materials and Methods: During the period July 2004-December 2007, a total number of two hundred twenty five probable donors underwent liver CT scan. We compared the CT volumetric results with intraoperative findings of the one hundred fifteen living donor liver transplantations that performed at our center. Resection borders were determined preoperatively with the aid of venous phase CT images by manual delineation in which the hepatic vessels were used as guide lines. Resected liver grafts were weighted intraoperatively. The calculation of volume was based on the specitic weight of 1 g/ml.

The study subjects consisted of 56 women and 59 men (age range 18-63). A manual volumetric measurement was completed within 18-20 minutes.

Results: Statistical analysis was performed with student T test and $P < 0.05$ was considered significant. No significant differences were found between the results of pre-operative CT volumetry and the intraoperative measurement.

Conclusion: Manual CT volumetric calculation is a reliable method for preparation of living donor liver transplantation.