※※目次※※

※※會議基本資訊※※

台灣外科醫學會 第 28 屆第二次會員代表大會暨第 82 次學術演講會 （112 年度外科聯合學術演講會）
日　　期：中華民國 112 年 3 月 19 日（星期日）
地　　點：高雄醫學大學及附設中和紀念醫院 （高雄市三民區自由一路 100 號）
報到地點：高雄醫學大學國際學術研究大樓 B2 大會報到處
報到時間：3 月 19 日上午 8 時～下午 4 時止。
外科年會官網：https://tsa2023.tw
掃描右圖 Qr-Code 瀏覽本屆年會官網

會場交通指引

高鐵：

高鐵左營站轉乘捷運紅線（往小港方向）至 R12 後驛站，自 2 號出口步行 800 公尺（約 8-10 分鐘）或轉搭乘市公車 33 號、紅 29、紅 30，即抵達會場。

高鐵左營站搭乘計程車至會場約 17 分鐘。

台鐵：

台鐵高雄站轉乘捷運紅線（往南岡山方向）至 R12 後驛站，自 2 號出口步行 800 公尺（約 8-10 分鐘）或轉搭乘市公車 33 號、紅 29、紅 30，即抵達會場。

台鐵高雄站搭乘計程車至會場約 5 分鐘。

高雄國際機場：

高雄國際機場搭乘計程車至會場約 30 分鐘。

公車：

搭乘 28、33、53B、紅 28、紅 29、紅 30、紅 31，於「高醫（十全路）」下車，即抵達會場。

停車：

校內及院內停車場之車位數量有限，敬請多加利用大眾交通工具。

校內及院內停車資訊請至 TSA 2023 官網查詢。

午餐訊息

用餐區：

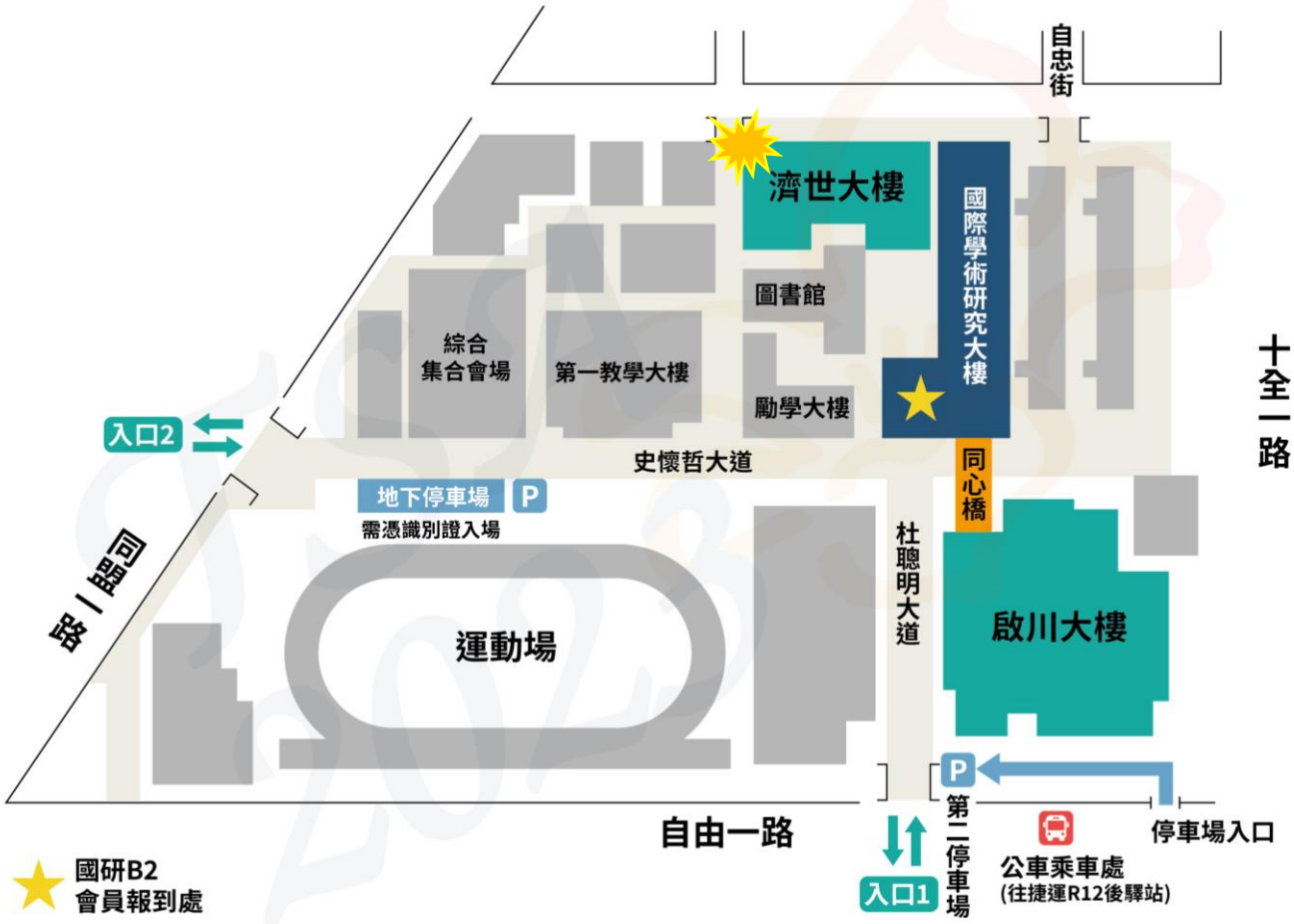
(1) 各講堂、所有會員休息區

(2) 國際學術研究大樓 1 樓 中庭廣場

(3) 啟川大樓 6 樓 第二會議室

※國際學術研究大樓 B2 A、B 廳及啟川大樓 6 樓第一、二講堂，不開放用餐，各講堂開放用餐時間為 12:00～13:00。

校園平面圖


自忠街
濟世大樓
國際學術研究大樓
圖書館
綜合
集合會場
第一教學大樓
勵學大樓
十全一路
入口2
史懷哲大道
同心橋
地下停車場
P
需憑識別證入場
同一路
杜聰明大道
運動場
啟川大樓
P
第二停車場
自由一路
入口1
公車乘車處
(往捷運R12後驛站)
停車場入口
國研B2
會員報到處

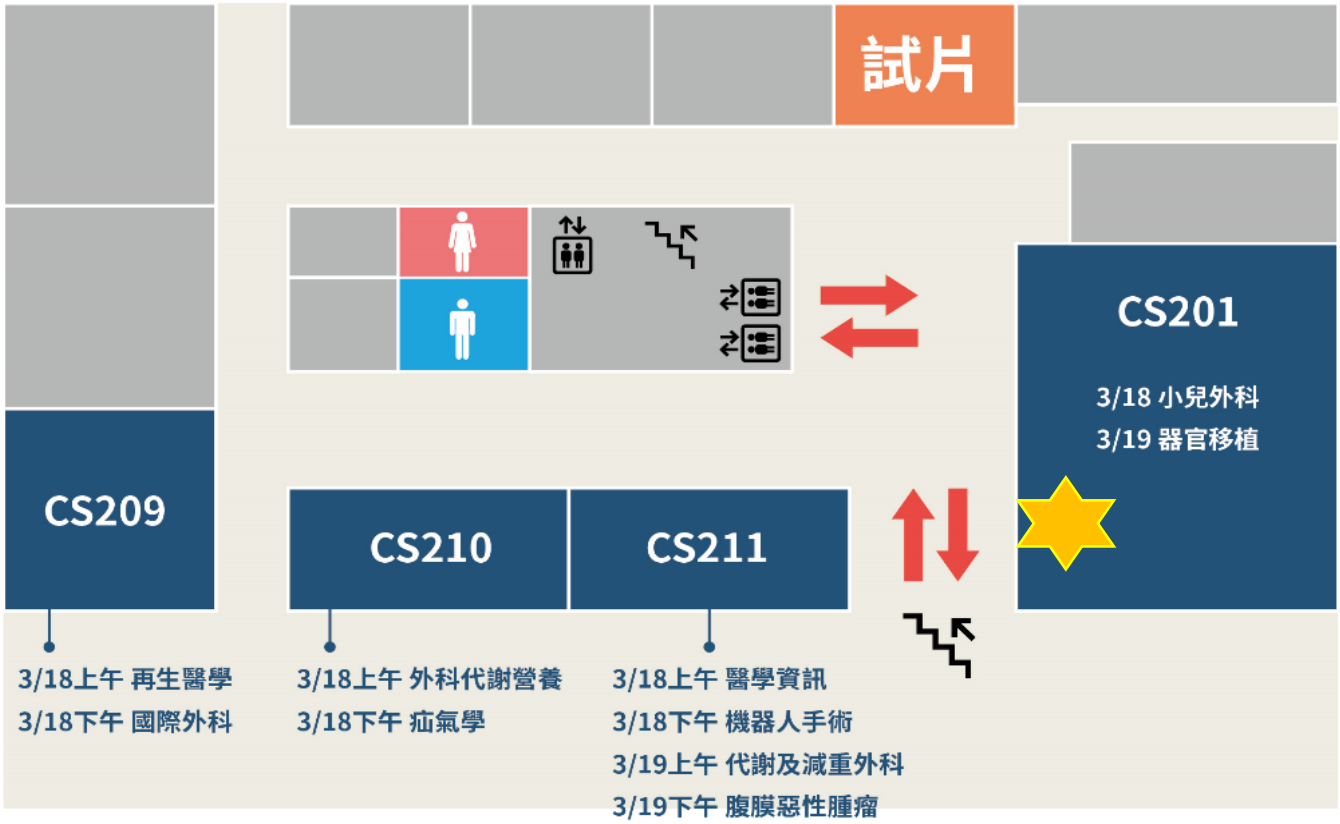
會場配置圖

國際學術研究大樓 B2 配置圖

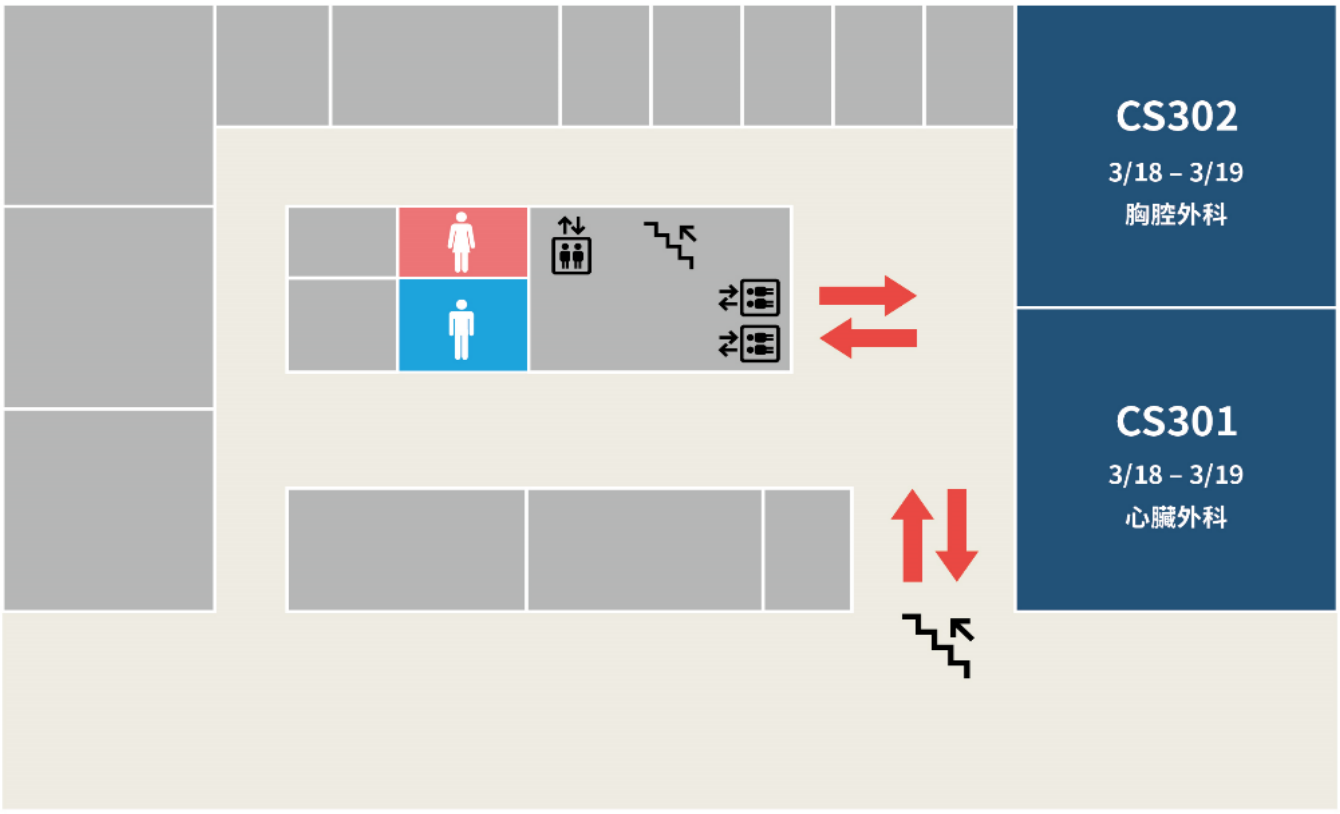
國際學術研究大樓 1 樓配置圖

濟世大樓 2-3 樓配置圖

濟世2樓



濟世3樓



特別演講 Special Lecture

台灣移植醫學學會

3 月 19 日（週日）濟世 2 樓 CS201 講堂

座長：胡瑞恒

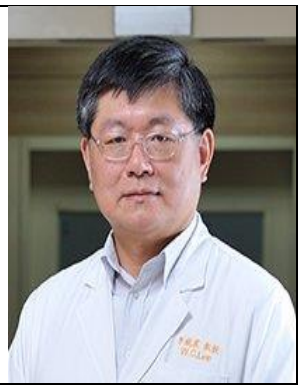
時間	題目／演講者／服務單位
0930-1030	**The role of liver transplant in HCC management landscape** 李威震 林口長庚

座長：江仰仁

時間	題目／演講者／服務單位
1300-1400	**How can we improve long-term patient and graft survival rates after kidney transplantation? －based on our experience and knowledge of the world－** Ryoichi IMAMURA Dept. of Urology, Nagasaki University Graduate School of Bioimedical Sciences, Japan

Curriculum Vitae

First Name	Wei-Chen	**Last Name**	Lee
Title	■Prof. □Dr. □Mr. □Mrs. □Ms.		
Nationality	**Taiwan,R.O.C**		
Organization	Chang Gung Memorial Hospital		
Position	Vice Superintendent		



Specialty

- transplantation immunology, tumor immunology
- Liver and Transplantation Surgery
-

Education

- Taipei Medical College (1980-1987)
- Research fellow, Transplantation Department, UPMC, University of Pittsburgh(1996.6 - 1998.5)
-

Experience

- Chief, Division of Liver and Transplantation Surgery
- Chief, Chang-Gung Transplantation Institute, LinKou
- Chief, Department of General Surgery, since July, 2016

Honors / Awards

Professional Affiliations:

- 1. Surgical Association, Republic of China
- 2. Formosa Medical Association
- 3. Surgical Society of Gastroenterology, R.O.C.
- 4. Taiwan Transplantation Society
- 5. International Society of transplantation
- 6. Member of American Society of Transplantation
- 7. Member, internation society of liver transplantation
- 8. Member, IHPBA

Professional Activities:

- Chair, Taiwan transplantation society, 2015-2017
- The Council member of Taiwan Transplantation Society
- The Council member of Taiwan Surgery Society
- The Council member of Taiwan Liver Tumor Society

Curriculum Vitae

First Name	Ryoichi	Last Name	Imamura
Title	■Prof. □Dr. □Mr. □Mrs. □Ms.		
Nationality	Japan		
Organization	Dept. of Urology, Nagasaki University Graduate School of Bioimedical Sciences		
Position	Professor and Chairman		

Specialty

Board Certificated Urologist by the Japan Urological Association
Board Certificated Transplant Physician by the Japan Society for Transplantation
Board Certificated Transplant Physician by Japanese Society for Clinical Renal Transplantation
Endoscopic surgical skill qualification system: qualified urologist
Endoscopic surgical skill qualification system in Urological Laparoscopy
Proctor Qualification System for Urological Robotic Surgery
General Clinical Oncologist by Japanese Board of Cancer Therapy
Board Certificated Physician by The Japan Endocrine Society

Education

- 2007 Ph.D., Osaka University Graduate School of Medicine
- 1996 M.D., Nara Medical University

Experience

2023-present	Professor and Chairman, Dept. of Urology, Nagasaki University Graduate School of Bioimedical Sciences
2017-2022	Professor, Dept. of Urology, Osaka University Hospital
2014-2022	Associate Professor, Dept. of Urology, Osaka University Graduate School of Medicine
2013-2014	Deputy Director, Dept. of Urology, Osaka General Medical Center
2010-2013	Medical Director, Dept. of Urology, Osaka General Medical Center
2009-2010	Medical Director, Dept. of Urology, Osaka Police Hospital
2008-2009	Assistant Medical Director, Dept. of Urology, Osaka Police Hospital
2007-2008	Research Fellow, Dept. of Medicine, Division of Nephrology, Indiana University
2007-2007	Clinical Fellow, Dept. of Urology, Osaka University Graduate School of Medicine
1999-2003	Medical Staff, Dept. of Urology, Osaka Seamen's Hospital
1998-1999	Medical Resident, Dept. of Urology, Osaka Rosai Hospital

一般論文口頭報告

座長：李明哲、陳登偉

時間／演講者	題目／作者／服務單位
0830-0845 陳之逸	**兒童活體肝臟移植早期細菌感染: 流行病學及風險因子** 陳之逸 高雄長庚紀念醫院
0845-0900 林燦勳	**以持續精進之血管縫合技巧降低困難活體肝臟移植中肝動脈重建之併發症** 林燦勳 高雄長庚紀念醫院
0900-0915 李詠馨	**肝臟移植治療威爾森氏症之臨床研究** 李詠馨 高雄長庚紀念醫院
0915-0930 陳德安	**肝臟移植受贈者於 COVID-19 確診之預後－單一醫學中心經驗** 陳德安 中國醫藥大學附設醫院

座長：阮俊能、石宜銘

時間／演講者	題目／作者／服務單位
1400-1410 傅薰儀	**小兒心臟移植案例報告-過大的心臟植體壓迫左側支氣管** 傅薰儀 國立臺灣大學醫學院附設醫院新竹臺大分院外科部 心臟血管外科
1410-1425 石柏威	**胰臟移植於尿毒症病患之探討：單一醫學中心之經驗** 石柏威 台北榮民總醫院

座長：劉君恕、郭亮鉾

時間／演講者	題目／作者／服務單位
1425-1435 吳任軒	**傳統假日對腎臟受贈者腎功能之影響** 吳任軒 林口長庚醫院
1435-1445 陳正彥	**肝臟移植病人在移植前使用 Nivolumab 或 Pembrolizumab 免疫檢查點抑制劑的最佳安全停藥時間** 陳正彥 臺北榮民總醫院
1445-1500 游暄萱	**在肝臟移植嚴重急性期 T 細胞介導排斥反應中血漿置換的角色** 游暄萱 台北榮民總醫院

座長：李志元、王叙涵

時間／演講者	題目／作者／服務單位
1520-1535 陳慧雅	**特殊益生菌進一步改善已穩定之移植腎功能的先期報告** 陳慧雅 嘉義長庚紀念醫院
1535-1550 楊筱惠	**來自成人邊緣性腎臟捐贈者的雙腎移植：個案分享** 楊筱惠 花蓮慈濟醫院
1550-1600 楊雅雯	**B 型肝炎帶原者接受腎臟移植體內免疫反應之動態變化** 楊雅雯 臺大醫院
1600-1610 王淑瑩	**心臟死後器官捐贈之分肝移植** 王淑瑩 中國醫藥大學附設醫院

座長：林志哲、王植熙

時間／演講者	題目／作者／服務單位
1610-1625 巫奕儒	**肝移植術後的腎移植: 雙器官移植 CNI 濃度初步報告** 巫奕儒 台中大里仁愛醫院 高雄長庚紀念醫院
1625-1640 蔡佩芩	**成人活體肝臟移植採用小肝移植體合併術中門脈壓力調節 之預後及風險分析** 蔡佩芩 台北榮總
1640-1650 王茗弘	**肝臟移植術後病人接受肝門靜脈支架之長期併發症及處理方式** 王茗弘 高雄長庚紀念醫院

1120073

兒童活體肝臟移植早期細菌感染: 流行病學及風險因子

陳之逸[1,2]　陳肇隆[1,2]　楊志權[1,2]　林志哲[1,2]

高雄長庚紀念醫院[1]外科部一般外科　[2]肝臟移植中心

Epidemiology and Risk Factors of Early Bacterial Infections after Pediatric Living Donor Liver Transplantation

Itsuko Chih-Yi Chen[1,2] Chao-Long Chen[1,2] Chee-Chien Yong[1,2] Chih-Che Lin[1,2] [1]General Surgery and [2]Liver Transplantation Center, Department of Surgery, Kaohsiung Chang Gung Memorial Hospital

Purpose:

Infectious complications remain a major cause of morbidity and mortality after LT. Pediatric recipients are at higher risks for infection, approximately 70% of children develop infections after LDLT. We aimed to assess the epidemiology and identify risk factors for early bacterial infections after pediatric LDLT.

Materials and Methods:

We retrospectively reviewed all pediatric LDLT performed at the Kaohsiung Chang Gung Memorial Hospital between January 2004 and December 2018. The primary outcome was bacterial infection during the first three months after LDLT. Univariate and multivariate analyses were performed to identify risk factors for early bacterial infections.

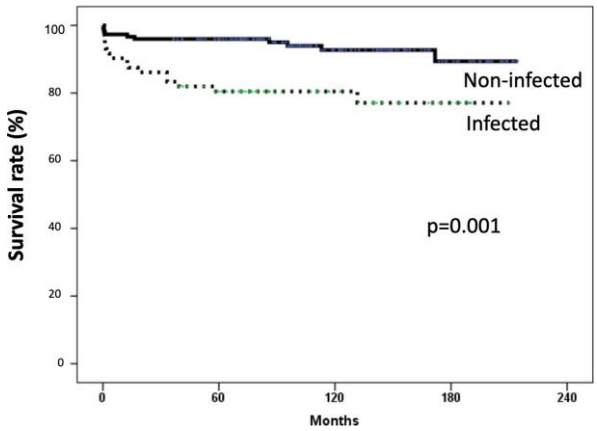
Results:

221 children underwent LDLT. Bacterial infection occurred in 72 patients during the first three months after LDLT (32.6%). Intra-abdominal infections were the most frequent focus of infection (40.6%). Multivariate analysis demonstrated that active infection before transplant (p=0.038) and complications with Clavien-Dindo grading >3 (p=0.003) were independent risk factors for early bacterial infections. Patients with infections had longer ICU (p=0.001) and hospital stay (p=0.009), more readmissions for bacterial infections (p=0.04), and lower overall

survival (p=0.001). Infection was responsible for nearly half of the deaths in those who developed early bacterial infections (7/15), as compared to only 10% in those without early bacterial infections (1/10).

Conclusion:

We found that early bacterial infections negatively affected both short and long term outcomes. Active infection during transplant and complications with Clavien-Dindo grading >3 were identified as independent risk factors. This suggests that in a highly experienced pediatric LDLT center, factors increasing technical complexity such as age, weight, disease severity, ABO-i, and intra-operative vascular stent placement, do not affect the risk of post-transplant infection. Our findings emphasize the importance of treating pre-transplant infections. Future research should be directed toward better prophylactic regimen for patients at risk, individualized prevention strategies and effective treatment for early bacterial infections.



Comparison of overall survival between the non- infected and infected groups

1120436

以持續精進之血管縫合技巧降低困難活體肝臟移植中肝動脈重建之併發症

林燦勳 林岑紘 郭寶仁 楊家森 江原正 李韋鋒 王世和 林志哲 劉約維 楊志權
陳肇隆 鄭汝汾 王植熙

高雄長庚紀念醫院 整形外科 肝臟移植中心

Management of Difficult Hepatic Artery Reconstructions to Reduce Complications Through Continual Technical Refinements in Living Donor Liver Transplantations

Tsan-Shiun Lin Cen-Hung Lin Pao-Jen Kuo Johnson Chia-Shen Yang Yuan-Cheng Chiang
Wei-Feng Li Shih-Ho Wang Chih-Che Lin Yueh-Wei Liu
Chee-Chien Yong Chao-Long Chen Yu-Fan Cheng Chih-Chi Wang

Department of Plastic and Reconstructive Surgery, Liver Transplant Center program, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan

Purpose:

Hepatic artery reconstruction (HAR) for liver transplantation is crucial for successful outcomes. We evaluated transplantation outcome improvement through continual technical refinements.

Materials and Methods:

HAR was performed in 1,448 living donor liver transplants by a single plastic surgeon from 2008 to 2020. Difficult HARs were defined as graft or recipient hepatic artery ≤2 mm, size discrepancy (≥2 to 1), multiple hepatic arteries, suboptimal quality, intimal dissection of graft or recipient hepatic artery (HA), and immediate redo during transplantation. Technique refinements include early vessel injury recognition, precise HA dissection, the use of clips to ligate branches, an oblique cut for all HARs, a modified funneling method for size discrepancy, liberal use of an alternative artery to replace a pathologic HA, and reconstruction of a second HA for grafts with dual hepatic arteries in the graft.

Results:

Difficult HARs were small HA (21.35%), size discrepancy (12.57%), multiple hepatic arteries (11.28%), suboptimal quality (31.1%), intimal dissection (20.5%), and immediate redo (5.18%). The overall hepatic artery thrombosis (HAT) rate was 3.04% in this series. The average HAT rate during the last 4 years (2017 to 2020) was 1.46% (6/408), which was significantly lower than the average HAT rate from 2008 to 2016 (39/1040, 3.8%) with a statistical significance ($p=0.025$). Treatment for posttransplant HAT included anastomosis after trim back (9), reconstruction using alternatives (19), and nonsurgical treatment with urokinase (9).

Conclusion:

Careful examination of the HA under surgical microscope and selection of the appropriate recipient HA are key to successful reconstruction. Through continual technical refinements, we can reduce HA complications to the lowest degree.

1120293

肝臟移植治療威爾森氏症之臨床研究

李詠馨[1,2] 林育弘[1,2] 詹宜嘉[1,2] 王世和[1,2] 陳肇隆[1,2] 林志哲[1,2]高雄長庚

紀念醫院[1]肝臟移植中心 [2]一般外科

Liver transplantation for Wilson's disease

Yeong-Sing Lee [1,2], Yu-Hung Lin[1,2], Yi-Chia Chan [1,2], Shih-Ho Wang [1,2], Chao-Long Chen [1,2] Chih-Che Lin[1,2]

Kaohsiung Chang Gung Memorial Hospital [1] Liver Transplantation Program [2] Department of Surgery

Purpose:

Wilson's disease (WD) is a rare autosomal recessive disorder affecting the metabolism of copper. Liver transplantation (LT) is the therapeutic option for severe complications of WD. We aimed to report on the long-term outcome of WD patients following LT.

Materials and Methods:

From 1984 and 2020, 28 patients with WD among 2100 recipients underwent LT at our institution. 17 received deceased donor LT(DDLT), od which 2 were split partial graft and 11 were from living donor LT (LDLT). Neither chelating agents nor diet control was administrated except in patients with persistent neurological deficit.

Results:

The mean ages were 20.7 and 30.5 years in DDLT and LDLT groups respectively. The MELD scores were 9.5 vs 12.9 in DDLT and LDLT groups. Clinically, 73% liver cirrhosis in both groups. Two patients from LDLT experienced acute liver failure status before transplant. Three patients developed overly neurological deficits, one of which had progressive neurological symptom and died of it. Overall, the 3,5 and 10-year survival rates were 89%, 89% and 75%. The survival was much better after 1994, in which LDLT was started. There were no significant differences between DDLT vs LDLT or full graft vs partial graft.

Conclusion:

Liver failure associated with WD is a rare indication for LT (1.3%), which achieves an excellent long-term outcome. Severe neurological deficit was poor prognostic factor for long-term survival.

1120922

肝臟移植受贈者於COVID-19確診之預後 - 單一醫學中心經驗

陳德安[1] 林建德[1] 陳聖賢[1] 許士超[1] 陳德鴻[1] 楊宏仁[1] 鄭隆賓[1 1] 中國醫藥大學附設醫院 外科部 一般外科

Prognosis of liver transplant recipients with COVID-19 - single-center experience

Te-An Chen[1] Chien-Te Lin[1] Sheng-Hsien Chen[1] Shih-Chao Hsu[1] Te-Hong Chen[1] Horng-Ren Yang[1] Long-Bin Jeng[1]

[1] Division of General Surgery, Department of Surgery, China Medical University Hospital

Purpose:

Along with the coronavirus disease 2019(COVID-19) outbreak in Taiwan, liver transplant recipients diagnosed with COVID-19 have been increasing. Our study is to investigate the prognosis of this specific immunocompromised population including mortality rate, ICU admission, ventilator use, acute distress respiratory syndrome and antiviral treatment.

Materials and Methods:

We conducted a single-center, case series study. All liver transplant recipients who diagnosed with COVID-19 until 31 July 2022 were enrolled.

Data collection including demographics, baseline clinical characteristics, days of liver transplantation to COVID-19 diagnosis, community acquired or hospital acquired, antiviral treatment, immunosuppressant adjustment, hospital admission, ICU admission, acute distress respiratory syndrome, mortality and post-COVID-19 laboratory variability.

Results:

Pending

Conclusion:

Mortality rate of COVID-19 infection in liver transplant recipients has no statistic significant compared with general population in Taiwan. Patient received antiviral treatment or not has

no significant different in prognosis. Immunosuppressant adjustment was a safe and efficacy management for liver transplant recipients during COVID-19 infection.

1120026

小兒心臟移植案例報告-過大的心臟植體壓迫左側支氣管

傅薰儀[1] 周恒文[2] 王憶嘉[3] 周迺寬[2] 陳益祥[2]

[1]國立臺灣大學醫學院附設醫院新竹臺大分院外科部 心臟血管外科
[2]國立臺灣大學醫學院附設醫院外科部 心臟血管外科
[3]國立臺灣大學醫學院附設醫院麻醉部 麻醉科

Case report Extreme size mismatch: bronchus compression by an oversized donor heart in a small child

Hsun-Yi Fu[1] Heng-Wen Chou[2] Yi-Chia Wang[3] Nai-Kuan Chou[2] Yih-Sharng[2]

[1]Department of Cardiovascular Surgery, National Taiwan University Hsinchu Branch, Hsinchu, Taiwan [2]Department of Cardiovascular Surgery, National Taiwan University Hospital, Taipei, Taiwan [3]Department of Anesthesiology, National Taiwan University Hospital, Taipei, Taiwan

Studies have suggested that a more liberal criterion of donor–candidate weight ratio is associated with superior waitlist survival without compromising posttransplant outcome in selected critically ill patients. Successful transplantation of an extremely oversized donor heart to a small recipient was reported.

A 2-year-old girl accepted a size-mismatched adult donor heart offer (donor-to-recipient weight ratio 4.4) because of frequent complications on left ventricular assist device. During the immediate postoperative period, spatial constraints within the small thoracic cavity compromised the graft function. Computed tomography revealed severe compression of left bronchus by the oversized allograft with lobar collapse of left lung. With temporary extracorporeal membrane oxygenation support, the graft function improved by one month posttransplant. Then, remarkable adaptive size remodeling of the transplanted heart with concomitant left bronchus re-expansion was noted within six months posttransplant. Despite complicated posttransplant recovery, the patient was discharged home with minimal respiratory sequelae.

Our report described an alternative strategy in managing early morbidities from oversizing graft and supported extending criteria of size match in pediatric heart transplant.

1120141

胰臟移植於尿毒症病患之探討：單一醫學中心之經驗

石柏威 石柏軒 陳世欽 石宜銘 王心儀台北榮總外科部一般外科

Pancreas Transplant Alone in Uremic Patients: A Single Center Experience

Bor-Uei Shyr Bor-Shiuan Shyr Shih-Chin Chen Yi-Ming Shyr Shin-E Wang

Division of General Surgery, Department of Surgery, Taipei Veterans General Hospital, Taiwan

Purpose:
Theoretically, pancreas transplant alone in uremic (PTAU) patients could also be one of the options for those waiting for both pancreas and kidney grafts, but it has never been reported.

Materials and Methods:
In total, 160 diabetes patients undergoing pancreas transplants were included in this study. Clinical data and outcomes were compared between pancreas transplant subgroups.

Results:
There were 26 (16%) PTAU. The 5-year patient survival was 66.2% after PTAU, 94.5% after SPK, 95.8% after PAK, and 95.4% after PTA. Rejection of pancreas graft was significantly lower in PTAU group (3.8%), followed by 16.7% in pancreas after kidney transplant (PAK), 29.8% in simultaneous pancreas and kidney transplant (SPK) and 37.0% in pancreas transplant alone (PTA). Fasting blood sugar and serum HbA1c levels after PTAU were not significantly different from those by other subgroups. The 5-year death- censored pancreas graft survival was 100% after PTAU and PAK, and 97.0% after SPK and 77.9% after PTA. However, the 5-year death-uncensored pancreas graft survival was 67.0% after PTAU, 100% after PAK, 91.3% after SPK, and 74.0% after PTA. The superior graft survival in the PTAU group was achieved only if deaths with a functioning graft were censored.

Conclusion:

Given the inferior patient survival outcome, PTAU is still not recommended unless SPK and PAK is not available. Although PTAU could be a treatment option for patients with diabetes complicated by end-stage renal disease (ESRD) in terms of surgical risks, endocrine function, and immunological and graft survival outcomes, modification of the organ allocation policies to prioritize SPK transplant in eligible patients should be the prime goal.

1120996

肝臟移植病人在移植前使用Nivolumab或Pembrolizumab免疫檢查點抑制劑的最佳安全停藥時間

陳正彥[1]　陳三奇[2]　林釀呈[1]　劉君恕[1]

[1]臺北榮民總醫院 外科部 移植外科 [2]臺北榮民總醫院 腫瘤醫學部 藥物治療科

Optimizing the safe washout period for liver transplantation following immune checkpoint inhibitors with nivolumab or pembrolizumab

Cheng-Yen Chen[1]　San-Chi Chen[2]　Niang-Cheng Lin[3]　Chinsu Liu[4]

[1]Division of Transplantation Surgery, Department of Surgery, Taipei Veterans General Hospital [2]Division of Medical Oncology, Department of Oncology, Taipei Veterans General Hospital

Purpose:

Using immune checkpoint inhibitors (ICI) as a downstaging therapy for liver transplantation (LT) has shown the dawn for patients with advanced hepatocellular carcinoma (HCC). However, the risk of post-transplant graft rejection conflicted with its results. The washout period (WO) between the last ICI dose and LT seems to be critical in preventing post- operative rejection. This study aimed to optimize the safe WO in balancing tumor burden suppression and rejection prevention by using ICI before LT.

Materials and Methods:

We reviewed the published case report or series from August 2019 to July 2022 about LT for HCC after downstaging or bridge therapy with ICI and combined our four cases. We noted that most patients received nivolumab or pembrolizumab, and both ICI shared a half-life of around 28 days. Therefore, we excluded the cases without definite data of WO or using ICI of non-nivolumab/pembrolizumab and enrolled 22 patients for analysis. We compared their clinical outcomes and estimated the rejection-free survival by every 0.5 half-life interval.

Results:

Most study subjects received nivolumab (n = 20). Six patients had severe rejections (nivolumab group, n = 5) and needed rescue management. Of the six cases, one patient died after rejection, and two underwent re-transplantation. The median WO in these six patients was 23 days (IQR: 9–35 days). In addition, we found that a 1.5 half-life (42 days) was the shortest safe WO with significant rejection-free survival (p = 0.038).

Conclusion:

Our results showed that 42 days was the shortest balancing time to arrange LT for HCC following ICI with nivolumab or pembrolizumab.

1120082

在肝臟移植嚴重急性期T細胞介導排斥反應中血漿置換的角色

游暄萱[1] 陳正彥[1,2,4] 葉奕成[3] 楊清越[3] 龍藉泉[1,2,4] 劉君恕[1,2,4]

[1]台北榮民總醫院外科部 [2]台北榮民總醫院外科部移植外科 [3]台北榮民總醫院病理部 [4]
國立陽明交通大學醫學系外科學科

The role of plasma exchange in severe acute T cell mediated rejection(TCMR) of liver transplantation

Hsuan-Hsuan Yu[1] Cheng-Yen Chen[1,2,4] Yi-Chen Yeh[3] Chin-Yueh Yang[3] Che-Chuan Loong[1,2,4] Chin-Su Liu[1,2,4]

[1]Departments of Surgery, Taipei Veterans General Hospital [2]Division of Transplantation Surgery, Department of Surgery, Taipei Veterans General Hospital [3]Department of Pathology, Taipei Veterans General Hospital [4]Department of Surgery, School of Medicine, College of Medicine, National Yang-Ming Chiao Tung University, Taipei, Taiwan

Background:
Therapeutic plasma exchange(TPE) was indicated in Anti-body mediated rejection(ABMR) after liver transplantation in several literatures. The first choice for treating T cell medicated rejection(TCMR) after liver transplantation is pulse therapy and antithymocyte globulin(ATG). The role of TPE in acute severe TCMR was seldom mentioned in literatures. Our study was to discuss benefit of early using TPE in acute severe TCMR.
Case presentation:
This 54-year-old woman was an HBV carrier and received living donor liver transplantation (Left with MHV, weight 540 gm, GRWR: 1.2%) on 2022/4/27 due to acute liver failure (MELD score=29, Child-Pugh C). Elevated liver enzymes with acute liver failure were noted on 2022/5/3. Abdominal CT on 2022/5/3 reported a filling defect at MHV, so an MHV stent was placed on 2022/5/4. Liver biopsy on 2022/5/10 reported acute severe TCMR(RAI=8)

and suspicious ABMR. Pulse therapy was given on 2022/5/13-5/16 and TPE was performed on 2022/5/19, 21, 23 with IVIG injection. The second round of TPE was conducted on 2022/6/4, 6, 8, 10, 11 with IVIG injection due to still high level of total bilirubin. Rituximab 200mg was given on 2022/6/12. Clinical condition, lab data, and follow-up abdominal sonography showed better improvement after treatment.

Conclusions:

TPE has the advantages of increasing antibody reduction and decreasing the level of total bilirubin. Early TPE may be considered in patients with severe TCMR with RAI>=7 or patients who received immunotherapy before liver transplantation or who have potential induced into ABMR from TCMR.

1120838

心臟死後器官捐贈之分肝移植

王淑瑩[1,2] 楊宏仁[1,2] 林冠妏[1,2] 林建德[1,2] 陳聖賢[1,2] 黃俊銘[1,2] 許士超[1,2] 陳德鴻[1,2]
葉俊杰[1,2]鄭隆賓[1,2]

[1]中國醫藥大學附設醫院外科部 [2]中國醫藥大學附設醫院一般外科

Split liver in donation after circulatory death of Liver Transplantation

Shu-Ying Wang[1,2] Horng-Ren Yang[1,2] Kuan-Wen Lin[1,2] Chien-Te Lin[1,2] Sheng-Hsien Chen [1,2]
Chun-Ming Huang[1,2] Shih-Chao Hsu[1,2] Te-Hong Chen[1,2] Chun Chieh Yeh[1,2] Long-Bin Jeng[1,2]

[1]Department of Surgery, China Medical University Hospital, Taiwan [2]Division of General Surgery and Digestive Surgery, China Medical University Hospital, Taiwan

Taiwan has legalized donation after circulatory death (DCD) organ donation in 2017, but the number of cadaveric liver donations is still far below the demand for organs, so a reasonable increase in organ sources is an important issue.

We performed a splitting liver transplantation on a DCD graft on August 3, 2022. The donor was a 37-year-old man with a BMI of 35.4 kg/m2 . He suffered from hypoxic brain injury and stayed in the ICU for 24 days before donation. The warm ischemia time of the liver graft was eighteen minutes and the total liver graft weighed 2268 g. Splitting of the graft was performed on back table with cavitron ultrasonic surgical aspirator. The left lobe liver weighed 730 g and the right lobe 1538 g.

The first recipient is a 57-year -old woman who received deceased donor liver transplantation in 2016 for hepatocellular carcinoma. Biliary anastomotic stricture developed after surgery and re-transplantation was indicated for graft failure due to repeat cholangitis. The graft source was left lobe liver, and the cold ischemia time was 257 minutes. Intra- abdominal infection developed and the patient was still in ICU for intensive care 58 days after surgery.

The second recipient is a 37-year-old man with alcoholic liver cirrhosis and massive ascites. The graft source was right lobe liver, and the cold ischemia time was 736 minutes. After surgery, he was discharged on POD 21 with stable condition.

Splitting of DCD liver with machine perfusion is feasible in previous report. Our experience showed that, splitting of DCD liver could be performed without machine perfusion.

1121058

傳統假日對腎臟受贈者腎功能之影響

吳任軒 [1] 徐膺昊 江仰仁 林國仁 林志德 潘柏諺 李允仁 王叙涵 [2]

[1] 林口長庚紀念醫院泌尿外科
[2] 長庚大學醫學系

Dietary Effect on Graft Function on Stationary Kidney Allograft Recipients during Traditional Holidays in Taiwan

Jen-Hsuan Wu[1], Ying-Hao Hsu, Yang-Jen Chiang, Kuo-Jen Lin, Chih-Te Lin, Pai-Yen Pan, Yun-Ren Li, Hsu-Han Wang[2]

Purpose: We observed transient creatinine elevations in kidney recipients with stationary graft
function in our hospital after two traditional holidays in Taiwan. In this retrospective cohort study, we compared the changes of their eGFR level after Dragon Boat Festivals and Mid-Autumn Festivals which are both associated with high-calorie and high-salt diets.
Materials and Methods: We retrospectively analyzed 367 stationary kidney recipients following at
Chang Gung Memorial Hospital, Linkou, Taiwan. Their baseline graft function was defined by the mean 3-month eGFR prior to the festive event. The Dragon Boat Festival is on the 5th of May in lunar calendar and the Mid-Autumn Festival is on the 15th of August in lunar calendar. The post-festival graft function was defined by the eGFR calculated by the serum creatinine level at the clinic after the festival. Patients were further divided into subgroups by their gender, age, and co-morbidities.
Results: In the analysis of Dragon Boat Festival, although overall eGFR did not significantly decline, we observed if the festival last 4 days, the post-festival eGFR decreased significantly (from 51.01±1.41 to 49.98±1.35 ml/min, p=0.0089). Further sub-group analysis showed female gender (p=0.024),
hypertensive (p=0.036), and diabetic (p=0.0082) patients had significant reduction in eGFR after the festival. In the analysis of Mid-Autumn Festival, overall eGFR similarly did not decline significantly, but after excluding the year 2020 due to COVID-19 restriction on barbecues, there was significant

reduction of eGFR after the festival (from 56.04±1.28 to 55.14±1.26, p=0.041). Further sub-group analysis showed male gender (p=0.0033), hypertensive (p=0.00084), and diabetic (p=0.00014)
patients had significant decline in their eGFR level after the festival. Conclusion: In our cohort, high- calorie and high-salt diets may cause decline of eGFR, especially in hypertensive and diabetic renal allograft recipients.

1120666

特殊益生菌進一步改善已穩定之移植腎功能的先期報告

陳慧雅 何東儒 黃雲慶 林健煇 劉昱良 陳志碩嘉義長庚紀念醫院

外科部 泌尿科

A pilot study of special strains of Lactobacillus to further improve a stabilized renal function of transplant kidney

Wai-Nga Chan Dong-Ru Ho Yun-Ching Huang Jian-Hui Lin Yu-Liang Liu Chih-Shou Chen

Divisions of Urology, Department of Surgery, Chang Gung Medical Foundation, Chiayi City, Taiwan

Purpose:

The aim of this study is to evaluate the effect of renal function after taking specific strains of Lactobacillus Mixture (LM-2) for 3 months in patients of kidney transplantation.

Materials and Methods:

We retrospectively reviewed 12 patients with kidney transplantation for more than 1 year who had taken Lactobacillus Mixture (LM-2) and followed at outpatient department for 3 months. They had two pills daily of LM-2 in the first month, then one pill daily in the second and the third month. We evaluated the effect of renal function by creatinine measurements and estimated glomerular filtration rate (eGFR) three months before and after they took LM-2. We also evaluated the impacts on immunosuppressants including tacrolimus, cyclosporin, everolimus and sirolimus.

The comparisons were performed using Wilcoxon matched-pairs signed rank test. A P value of <0.05 was considered statistically significant. All statistical analyses were performed by GraphPad Prism 7.00 software (San Diego, CA, USA).

Results:

A total of 12 patients were enrolled, one quitted because of severe gastroesophageal reflux

disease (GERD) after LM-2 in the second month. Median years of transplantation was 7.1 years (1.8-14.1 years). Seven (7/11, 64%) patients are having tacrolimus, 3 patients (27%) with cyclosporin, 6 patients (55%) with sirolimus and 3 (27%) with everolimus. There was no history of immunosuppressants adjustment or admission because of infection events in these six months. The mean serum creatinine and mean GFR were 1.2±0.36 mg/dL and 60±16.9 ml/min three months before LM and 1.15±0.33 mg/dL and 63±16.9 ml/min three months after LM. Both were significantly different with p value 0.03 and 0.02 respectively. On the other hands, there was no difference between the drug level of tacrolimus (p=0.7) and sirolimus (p=0.3), we did not evaluate the drug level of cyclosporin and everolimus because there were only one and two samples respectively. Due to the difference of creatinine is not impressive in good renal function status, we retrospectively to collect the serum creatinine of the rest patients in the same period to assess if the trivial significant change is because of laboratory calibration effect. In the rest patients, creatinine increased from 1.03 ± 0.37 mg/dL to 1.10 ± 0.41 mg/dL which explained the improvement of renal function was the effect of LM-2 exposure, not owing to the laboratory calibration impacts.

Conclusion:

Our results showed that LM-2 could improve the renal function with decreased serum creatinine 0.05 mg/dL ± 0.07 (4%) and 3.1 ml/min ± 3.9 (5%) increased GFR. The renal function may be improved through the LM-2 Lactobacillus which can remove the endogenous renal toxin. There was one patient (8%) quitted because of severe GERD. The LM-2 was safe in patients with kidney transplantation without increased risk of infection or admission. This pilot finding may raise curiousness of society how to further improve the stabilized renal function using probiotics.

1120122

來自成人邊緣性腎臟捐贈者的雙腎移植：個案分享

楊筱惠[1]　施明蕙[2]　周桂君[2]　何靜淳[1,2]　陳言丞[1,2,3]

[1]花蓮慈濟醫院外科部　[2]花蓮慈濟醫院器官移植中心　[3]慈濟大學醫學系外科學科

Successful dual kidney transplantation from an adult marginal donor: case report

Hsiao-Hui Yang[1]　Ming-Hui Shih[2]　Kuei-Chun Chou[2]　Ching-Chun Ho[1,2]　Yen-Cheng Chen[1,2,3]

[1]Department of Surgery and [2]Organ Transplantation Center, Hualien Tzu Chi Hospital, Tzu Chi Medical Foundation, Hualien, Taiwan [3]Department of Surgery, School of Medicine, College of Medicine, Tzu Chi University, Hualien, Taiwan

Case report:
Kidneys from expanded criteria donors (ECD) are now used for transplantation due to increasing demands and organ shortage. Dual kidney transplantation (DKT) of marginal kidneys to a single recipient allows utilization of ECDs and reduces the organ discard rate. Here, we present a case with end-stage renal disease (ESRD) under hemodialysis, who received DKT without delayed graft function.

The patient is a 62-year-old male with ESRD under hemodialysis for twenty years. His pre-operative creatinine was 7.28 mg/dL and eGFR was 8.12 mL/min. His cross matching was negative, HLA typing (1A1B mismatch) and panel reactive antibodies (PRA) class I was 4.18% and class II was 2.1%. He received dual kidney transplantation from an expanded criteria donor, who was 64-year-old male with hypertension and chronic kidney disease under grade 2 acute kidney injury after traumatic brain injury (baseline serum creatinine 2.02 mg/dL and pre-retrieval creatinine level 3.8 mg/dL). The two kidneys were transplanted by intraperitoneal approach and placed in right extraperitoneal space. The graft renal veins with IVC patch were anastomosed in end-to-side fashion to the external iliac vein. The Carrel patches of graft renal arteries were anastomosed to external iliac artery and common iliac artery in end-to-side fashion. The left kidney was placed superiorly to the right kidney by

vascular length. The ureters were anastomosed to the bladder separately by Lich-Gregoir technique and the double-J ureteral stents were placed in both ureters.

The immunosuppresants strategy is three combinations of calcineurin inhibitor, antimetabolite and steroid with induction by interleukin-2 receptor antagonist (Basiliximab). The post-transplant urine output was adequate (1.5-2 ml/kg/hr) immediately, but the creatinine levels were still fluctuating. His renal function improved gradually within the first week. No delayed graft function, no vascular complications, and no urine leakage were present. The double-J ureteral stents were removed on POD 30 in outpatient clinic. Now the patient is under maintenance of three combinations of immunosuppressants with the stable serum creatinine 1.65 mg/dL and eGFR 45.01 mL/min.

Currently, the donor selection criteria for DKT vary, including donor age, eGFR, and serum Cr level. To reduce organ discard rate, we decided DKT in a single recipient for acceptable renal function. This is our first case of DKT from marginal donor with satisfactory renal graft function. Long-term follow-up of graft function is needed.

1120997

B型肝炎帶原者接受腎臟移植體內免疫反應之動態變化

楊雅雯[1,2], 陳建嘉[2], 楊卿堯[2], 李志元[2], 楊宏志[3], 江伯倫[1], 莊雅惠[4], 吳伊婷[2], 賴鴻緒[2,5], 蔡孟昆[2,6]

[1] 臨床醫學研究所, 台灣大學醫學院, 台北, 台灣

[2] 外科部, 台大醫院, 台北, 台灣

[3] 內科部, 台大醫院, 台北, 台灣

[4] 醫學檢驗暨生物技術學系, 台灣大學醫學院, 台北, 台灣

[5] 外科部, 慈濟醫院, 花蓮, 台灣

[6] 外科部, 台大醫院新竹分院, 新竹, 台灣

Dynamics of cellular immune responses in recipients of renal allografts positive for hepatitis B surface antigen

Ya-Wen Yang[1,2], Chien-Chia Chen[2], Ching-Yao Yang[2], Chih-Yuan Lee[2], Hung-Chih Yang[3], Bor-Luen Chiang[1], Ya-Hui Chuang[4], Tiffany E. Wu[2], Hong-Shiee Lai[2,5], Meng-Kun Tsai[2,6]

[1] Graduate Institute of Clinical Medicine, National Taiwan University College of Medicine, Taipei, Taiwan

[2] Department of Surgery, National Taiwan University Hospital, Taipei, Taiwan

[3] Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan

[4] Department of Clinical Laboratory Sciences and Medical Biotechnology, National Taiwan University College of Medicine, Taipei, Taiwan

[5] Center for Surgical Development, Buddhist Tzu Chi General Hospital, Hualien, Taiwan

[6] Department of Surgery, National Taiwan University Hospital, Hsin-Chu Branch, Hsin-Chu City, Taiwan

Purpose:

Hepatitis B surface antigen (HBsAg)-positive renal transplantation recipients must take lifelong immunosuppressants and nucleotide analogues (NAs). We investigated the cellular immune responses of HBsAg-positive renal transplantation recipients taking

immunosuppressants and NAs.

Materials and Methods:

Blood samples were collected from HBsAg-positive individuals with end-stage renal disease on the transplant waiting list (Group 1) and renal transplantation recipients taking immunosuppressants and NAs (Group 2) or immunosuppressants without NAs (Group 3). Hepatitis B virus (HBV)-specific pentamers were used to quantify circulating HBV-specific CD8+ T cells.

Results:

Groups 2 and 3 had higher cellular immune responses, as indicated by significantly lower regulatory T (Treg)/CD8+ T cell ratios than Group 1. With undetectable viral loads under both immunosuppressant and NAs, the CD8+ T cell and HBV-specific CD8+ T cell frequencies were similar in Group 2 and Group 1. Patients in Group 3 did not use NAs and had an elevated viral load and higher HBV-specific CD8+ T cell and IFN-g-producing HBV- specific CD8+ T cell frequencies, but lower a frequency of programmed death-1 (PD-1)+ HBV-specific CD8+ T cells than the other groups. Increased viral replication in Group 3 resulted in significantly higher CD8+ T cell and IFN-g-producing CD8+ T cell frequencies than Group 1.

Conclusion:

Immunosuppressant therapy increases viral replication in HBsAg-positive renal transplant recipients due to disabling or dysregulation of virus-specific CD8+ T cells. The higher cellular immune responses due to lower Treg/CD8+ T cell ratios in HBsAg-positive renal transplant recipients may be one of the reasons to induce liver pathology because of uncontrolled viral replication.

1120165

肝移植術後的腎移植: 雙器官移植CNI 濃度初步報告

巫奕儒[1,2] 林志哲[2] 林育弘[2] 王植熙[2] 陳肇隆[2]

[1]台中大里仁愛醫院 [2]高雄長庚紀念醫院

Kidney after Liver Transplantation: Preliminary Experience of CNI Level

YI-JU WU[1,2] Chih-Che Lin[2] Yu-Hung Lin [2] Chih-Chi Wang [2] Chao-Long Chen[2]

[1] Jen-Ai Hospital - Dali [2]Kaohsiung Chang Gung Memorial Hospital

Purpose:

The indication leading to a combined kidney-liver transplantation was established as a treatment modality for the patients suffering from end-stage liver disease (ESLD), with highly elevated serum creatinine levels or end-stage renal disease (ESRD). Combined kidney-liver allografts were found to have reduced rejection rate and improved rejection-free survival when they were simultaneous, originating from the same deceased donor. However, it has not been firmly established whether this combined kidney after liver transplants (KALT) sequentially from the different living donors still have the reduced rejection effect under the similar immunosuppression regimens.

Materials and Methods:

Between 2015 and 2022, we evaluated 18 KALTs and assessed first year rejection and survival. These combined KALT patients were compared to kidney alone transplanted (KAT) patients under similar immunosuppression regimens. All patients received induction therapy with anti-thymocyte globulin and were maintained on tacrolimus and mycophenolate immunosuppression regimen during the first year.

Results:

There were 18 KALT, which were compared with 53 K KAT patients. Freedom from first year rejection, both cellular and antibody-mediated, was comparable between the two groups. There was also no difference in first year survival between the two groups.

Conclusion:

KALT patients do not appear to have a protective effect from rejection compared to KAT under similar immunosuppression regimens. Sequential renal allografts from different donors after a liver transplant did not show significantly protective effects from rejection.

1120761

成人活體肝臟移植採用小肝移植體合併術中門脈壓力調節 之預後及風險分析

蔡佩芩[1] 林釀呈1 陳正彥[1] 蔡昕霖[1,2] 雷浩然[1,3] 鍾孟軒[1] 周書正[1,3] 王信凱[4] 王審之[5] 夏振源[1,3] 龍藉泉[1,3] 劉君恕[1,2]

[1]台北榮總外科部移植外科 [2]外科部兒童外科 [3]一般外科 [4]放射線部 [5]麻醉部

Outcomes of small liver graft and risk factors associated with early graft loss in adult living donor liver transplantation

PeiChing Tsai[1] NiangCheng Lin[1] ChengYen Chen[1] HsinLin Tsai[1,2] HaoJan Lei[1,3] MengHsuan Chung[1] Shu-Cheng Chou[1,3] HsinKai Wang[4] ShengJi Wang[5] ChengYuan Hsia[1,3] CheChuan Loong[1,3]
Chinsu Liu[1,2]

[1]Divisions of Transplantation Surgery [2]Pediatric Surgery [3]General Surgery Department of Surgery [4] Department of Radiology [5] Department of Anesthesiology Taipei Veterans General Hospital .

Purpose:

Small partial graft used in living donor liver transplantation (LDLT) is susceptible to sinusoidal injury which results in detrimental outcomes without optimal intra-operative portal pressure modulation (IOPPM). The study is aimed to assess our clinical outcomes of adult LDLT using these small liver grafts under IOPPM, and to stratify the risk factors associated with early graft loss in these patients.

Materials and Methods:

The study consisted to 225 adult LDLT recipients with intra-operative portal pressure monitoring in our institute between 2011~2021.These patients were divided into three groups based on their graft-to-recipient weight ratio (GRWR; group 1: GRWR>1%, group 2: GRWR 0.8~1%, group 3: GRWR<0.8%). The intra-operative and the clinical outcomes, including the

incidence of early graft survival loss, were compared between the 3 groups. Multi-variant analysis was used to assess the risk factors associated with early (<3 months post-transplant) graft loss.

Results:

To compare with group 1 (n=124) and group 2 (n=70), there were more cases transplanted for acute liver failure (p=0.043), using the left lobe grafts (p<0.0), with longer cold and warm ischemia time in patients with small liver grafts (group 3; n=31). The portal pressure change after reperfusion was lower in group 3 (7.4±6.5/ 7.9±6.2/ 9.0±5.4 mmHg in group3/2/1 respectively, p=0.171), and these patients (group 3) were associated with inferior post-transplant outcomes (higher serum total bilirubin, creatinine and INR level) and higher incidence of early graft loss (7/24, 3/67, 9/115 in group 3/2/1 respectively, p=0.007). Multi-variant analysis showed that in addition to the etiology of acute liver failure and the optimal IOPPM (post-perfusion portal pressure <=18mmHg), "GRWR <0.7%" is a significant risk factor for early graft loss (95%CI: 0.0190~0.024, p<0.001). Subgroup analysis showed that GRWR 0.7~0.8% could achieve comparable survival with group 2 and group 1, while GRWR<0.7% was associated with significant inferior graft survival rate at 3-month post transplantation (50.0%/94.7%/95.5%/92.7% in GRWR<0.7%/0.7~0.8%/group2/group1).

Conclusion:

Despite of aggressive IOPPM, results from our series showed that GRWR<0.7% is still a critical risk factor for early graft loss in adult LDLT, while GRWR 0.7~0.8% could be adopted safely with favorable outcomes.

1120793

肝臟移植術後病人接受肝門靜脈支架之長期併發症及處理方式

王茗弘[1] 楊志權2 林志哲[2] 陳肇隆2 鄭汝汾[3] 林育弘2

[1]高雄長庚紀念醫院一般外科 2高雄長庚紀念醫院肝臟移植外科 #3高雄長庚紀念醫院放射診斷科

The complication and management in liver transplantation patient with long segment portal vein stent

Ming-Hung Wang[1] Chee-Chien Yong2 Chih-Che Lin[2] Chao-Long Chen2 Yu-Fan Cheng[3] Yu-Hung Lin2

[1]General Surgery, Department of Surgery, Kaohsiung Chang Gung Memorial Hospital 2Liver Transplant Center, Department of Surgery, Kaohsiung Chang Gung Memorial Hospital #3Department of Radiology, Kaohsiung Chang Gung Memorial Hospital

Introduction:

Portal vein stenosis (PVS) is one of the serious and not uncommon complications of living donor liver transplantation (LDLT). PVS without appropriate treatment can lead to portal hypertension, impaired liver function, and eventually the graft failure. Percutaneous or intraoperative transluminal angioplasty with stent placement is effective in treating PVS. However, this intervention may complicate with stent stenosis, obstruction, or malposition. Here we present a case of long-term portal vein stent complication.

Case:

A 12-year-old boy with history of biliary atresia received LDLT with left lateral segment (LLS) in 2011. However, portal vein anastomotic stenosis was found with computed tomography angiography (CTA) in 2012 during a regular follow-up. Hence, a portal vein wall stent was placed and the flow of portal vein has improved.

However, three times of esophageal varicose (EV) bleeding happened from 2018 to 2020, and EV ligation were performed. In 2022, narrowing of the orifice of the SMV side of the stent with right side mesenteric vein engorgement was found. High venous pressure gradient was found over the SMV-side stent narrowing. Stent insertion was performed and the pressure

gradient between the stenotic region decreased after the intervention. Unfortunately, EV bleeding recurred 12 days after the operation. We suspected the original long PV stent occluded the splenic vein causing engorged left side collateral veins complicated with EV bleeding. In order to reduce the left side portal hypertension, splenectomy was performed, and the EV resolved gradually. The patient was doing well after the surgery with regular follow-up at OPD.

Discussion:

The overall PVS rate in LDLT is about 9-27%. Most of the stenosis were managed by PV stent insertion. The long-term portal vein stent complication rate is 3% with the most complications are stent thrombosis and hemoperitoneum. We presented a case with a long portal vein stent which relieved the PVS but also occluded the splenic vein and caused left side portal hypertension. By managing this case, we have learnt that not only in-stent thrombosis and hemorrhage might occur but also the length and the position of the stent are critical to an uneventful long-term outcome.

Conclusion:

Portal vein stent is a good management for portal vein stenosis with a promising outcome. However, the risk of in-stent thrombosis, hemorrhage and the adjacent vessels occlusion should always be reminded.

一般論文 E-Poster

器官移植

發表者／編號	題目／作者／服務單位
曾香毓 TSA371	**長期追蹤腎功能變化於活體肝臟移植術後:比較肝腎症候群和慢性腎病變族群** 曾香毓 高雄長庚紀念醫院
黃瑋 TSA372	**亞洲肝移植受贈者於接受兩劑 mRNA-1273 疫苗後的體液性免疫反應不受抗代謝藥物影響** 黃瑋 台中榮民總醫院
劉蕙溥 TSA373	**MMF 單一抗排斥藥挽救腎功能異常在活體肝移植的經驗。** 劉蕙溥 高雄長庚紀念醫院
侯登原 TSA374	**階段性膽道重建在活體肝臟移植之預後及膽道併發症：傾向分數配對分析** 侯登原 高雄長庚紀念醫院
王鈺鎮 TSA375	**肝臟移植術後早期使用 Sirolimus 產生切口疝氣的經驗分享** 王鈺鎮 高雄長庚紀念醫院
劉育伶 TSA376	**肝臟移植前，以質子治療局部控制超過舊金山大學準則的肝癌：兩個病例報告** 劉育伶 高雄長庚
劉育伶 TSA377	**一位重症患者的肝臟移植** 劉育伶 高雄長庚

1120097

長期追蹤腎功能變化於活體肝臟移植術後:比較肝腎症候群和慢性腎病變族群

曾香毓[1] 林育弘[1] 林志哲[1] 詹宜嘉[1] 楊志權[1]

高雄長庚紀念醫院[1]

Long-term renal function outcomes comparison between adult patients with chronic kidney disease and hepatorenal syndrome after living donor liver transplantation

Hsiang-Yu Tsang[1] Yu-Hung Lin[1] Chih-Che Lin[1] Yi-Chia Chan[1] Chee-Chien Yong[1]

Department of Surgery, Division of General Surgery, Chang Gung Memorial Hospital, Kaohsiung, Taiwan[1]

Purpose:

Hepatorenal syndrome (HRS) is a disastrous renal complication of advanced liver diseases, and it indicates poor prognosis. Restoring normal liver function by liver transplantation (LT) is a standardized treatment with favorable short-term survival. However, the results of long-term and renal outcome are controversial in HRS patients receiving living donor LT (LDLT). Hence, this study aimed to investigate the prognostic impact of LDLT for HRS patients.

Materials and Methods:

We reviewed adult patients undergoing LDLT from July 2008 to September 2017. Recipients were classified into HRS type 1 (HRS1, N=11), HRS type 2 (HRS2, N=19). Non- HRS recipients with pre-existing chronic kidney disease (CKD, N=43) or propensity score matched normal renal function (N=67) were regarded as two control groups.

Results:

The postoperative complication and 30-day surgical mortality were comparable between HRS1, HRS2, CKD, and normal renal function groups. The HRS patients had an excellent 5-year survival. The estimated glomerular filtration rate (eGFR) transiently improved and peaked at 4 weeks post-transplant in HRS patients. However, the renal function deteriorated

and resulted in 72.7% of HRS1 and 78.9% of HRS2 patients falling into CKD stage ≥III (eGFR below 60 ml/min/1.73m2). The incidence of developing CKD and ESRD are similar between HRS1 (72.7% and 8.3%), HRS2 (78.9% and 10.5%) and CKD groups (90.7% and 27.9%), but significantly higher than normal renal function group (both P<0.001). In multivariate logistic regression, pre-LDLT eGFR <46.4 ml/min/1.73m2 predicted the development of post-LDLT CKD stage ≥III in HRS patients (AUC=0.807, 95% CI=0.617- 0.997, P=0.011).

Conclusion:

LDLT provided an non-inferior survival benefit for HRS patients. However, the risk of CKD stage ≥III and ESRD among HRS patients was high and similar to pre-transplant CKD recipients. Early renal-sparing strategy after LDLT for HRS patients to prevent adverse renal event is recommended.

1120123

亞洲肝移植受贈者於接受兩劑mRNA-1273疫苗後的體液性免疫反應不受抗代謝藥物影響

黃瑋[1] 賴家鈺[1] 劉嘯天[1] 陳怡如[1] 蔡惠珠[2] 劉伯瑜[3]

鄭紹彬[1]1 台中榮民總醫院外科部一般外科
2 台中榮民總醫院護理部
3 台中榮民總醫院內科部感染科

Humoral Response to Two Doses of the mRNA-1273 Vaccine in Asian Liver Transplant Recipients Unaffected by Antimetabolites

Wei Huang[1] Chia-Yu Lai[1] Hsiao-Tien Liu[1] Yi-Ju Chen[1] Hui-Chu Tsai[2] Po-Yu Liu[3] Shao-Bin Cheng[1]

1 Division of General Surgery, Department of Surgery, Taichung Veterans General Hospital, Taichung, Taiwan
2 Department of Nursing, Taichung Veterans General Hospital, Taichung, Taiwan
3 Division of Infection, Department of Internal Medicine, Taichung Veterans General Hospital, Taichung, Taiwan

Purpose:

Data on the immunogenicity of mRNA vaccines in solid transplant recipients are emerging; however, data on liver transplant recipients of Asian ethnicity remain limited.

Materials and Methods:

We recruited 33 Asian liver transplant recipients who received two doses of the Moderna mRNA-1273 vaccine and obtained blood samples for the semi-quantitative determination of antibodies to the SARS-CoV-2 S protein receptor-binding domain (RBD) at least 2 weeks after each vaccination. The participants were also required to note any adverse events 1 week after the booster vaccination.

Results:

Antibody response after the priming and booster doses of the mRNA-1273 vaccine was 50% and 100%, respectively. The participants were further stratified into optimal (N=27, >250 U/ml) and inadequate (N=6, <250 U/ml) response groups according to the upper limit of the numeric antibody titer. A shorter time after transplantation and lower estimated glomerular filtration rate (eGFR) were significantly associated with an inadequate titer. The post-vaccination humoral response appeared unaffected by use of antimetabolites. No severe adverse events were reported.

Conclusion:

The post-vaccination immunogenicity of Asian liver transplant recipients was satisfactory, whereas the reactogenicity to the novel vaccine was minimal

1120381

MMF單一抗排斥藥挽救腎功能異常在活體肝移植的經驗。

劉蕙溥[1,2] 林育弘[1] 林志哲[1] 楊志權[1] 陳肇隆[1]

[1]高雄長庚紀念醫院一般外科 [2]國軍高雄總醫院一般外科

Mycophenolate Mofetil Monotherapy as Second Line Treatment versus Calcineurin Inhibitor- or Mammalian Target of Rapamycin Inhibitor- Based Treatment in Living Donor Liver Transplantation Patients with Immunosuppressants-related Nephrotoxicity: A Cohort Study of One Single Liver Transplantation Center in Taiwan

Hui-Pu Liu[1,2] Yu-Hung Lin[1] Chih-Che Lin[1] Chee-Chien Yong[1] Chao-Long Chen[1]

[1]Division of General Surgery, Department of Surgery, Kaohsiung Chang Gung Memorial Hospital [2]Division of General Surgery, Department of Surgery, Kaohsiung Armed Forces General Hospital

Purpose:

In patients of post liver transplantation under immunosuppressant treatment with calcineurin inhibitors- (ex. Tacrolimus) or mTOR inhibitor- related acute or chronic kidney injury, is monotherapy of Mycophenolate mofetil (MMF) a safe policy as salvage treatment?

In daily practice of Kaohsiung Chang Gung Memorial Hospital, a high-volume liver transplantation center in Taiwan, in managing acute kidney injury after immunosuppressant treatment with Tacrolimus (FK-506) based therapy is quite a perplexing issue. Either to reduce dosage of FK-506 or to change to mTOR based treatment is the current policy to be adopted. Notwithstanding, deterioration of kidney function in some cases like persistent proteinuria was still noted despite the alternative treatment mentioned above. Reviewing some literature concerning MMF monotherapy and database in Kaohsiung Chang Gung Memorial Hospital, we found some cases among those ongoing worsened renal function could benefit from MMF monotherapy as salvage treatment seen in improved renal function and no major complications. Therefore, we are trying to obtain certain evident data to verify if MMF monotherapy could be a safe policy and a feasible way as salvage treatment in

dealing with such a dilemma.

Materials and Methods:

One hundred patients receiving liver transplantation who developed renal insufficiency due to calcineurin inhibitor had been treated by renal-sparing strategy with subsequent deterioration at our institution (2000 –2021) were subgrouped into: 50 patients (male:44, female:6) continued de-escalated CNI- or mTOR- based treatment, the other 50 patients (male:41, female:9) were switched to MMF monotherapy, and follow-up was at least 1 years. We checked renal function profiles including creatinine, estimated Glomerular filtration rate(eGFR), urine protein during follow-up at the time of 1 month, 3 months, 6 months, and 12 months after starting second line treatment. Deterioration or improvement of renal function was defined as a decrease/increase in GFR of more than or equal to 20% compared with GFR at study onset.

Results:

Patients were converted to MMF monotherapy after a median of 7.9 years after liver transplantation. In MMFm group(n=50), prior to shifting to MMF monotherapy, 19 were FK-based, and 31 were mTOR-based renal-sparing treatment. Indications for switching to MMF monotherapy were adverse effects of CI or mTOR inhibitor (CKD in 18 patients, and proteinuria in 32 patients). Median dosage of MMF was 500mg twice daily (500–2000 mg). Referring to follow-up of creatinine level at 6 months in MMFm group, improvement in eGFR was noted in 5 cases, deterioration in 6 cases (1 developed ESRD and received hemodialysis), and stable in 39 cases. In the control group, improvement in eGFR was noted in 5 cases, deterioration in 12 cases (5 developed ESRD and received hemodialysis), and stable in 33 cases. In MMFm group, side effects were leukopenia in five of 50 patients (10%), diarrhea in 3 of 50 patients (6%), and no acute rejection.

Conclusion:

MMF monotherapy as a second line immunosuppressant might improve renal function and was not associated with a significant risk of allograft rejection. In patients with nephrotoxicity due to CI or mTOR inhibitor in liver transplantation with poor response to renal sparing strategy of immunosuppressants, MMF monotherapy could be an option for renal protection with tolerable adverse effects.

1120395

階段性膽道重建在活體肝臟移植之預後及膽道併發症：傾向分數配對分析

侯登原[1] 林燦勳[2] 葉承熙[1] 李韋鋒[1] 楊志權[1] 王世和[1] 林志哲[1] 陳肇隆[1] 王植熙

[1] 高雄長庚紀念醫院外科部 [1]一般外科 [2]整形外科

Outcomes and biliary complications of staged biliary reconstruction in living donor liver transplantation: A Propensity Score Matched Analysis.

Teng-Yuan Hou[1] Tsan-Shiun Lin[2] Cheng-His Yeh[1] Wei-Feng Lee[1] Chee-Chien Yong[1] Shih-Ho Wang[1] Chih-Che Lin[1] Chao-Long Chen[1] Chih-Chi Wang[1]

[1]Division of General Surgery, [2]Division of Plastic Surgery, Department of Surgery, Kaohsiung Chang Gung Memorial Hospital, Taiwan.

Purpose:

Uncontrolled massive bleeding and bowel edema are critical issues during performing liver transplantation. In encountering these circumstances, temporal intra-abdominal packing with staged biliary reconstruction (SBR) had been mentioned as comparable results in deceased donor liver transplantation. However, data in living donor liver transplantation (LDLT) are scarce. Therefore, we aim to analyze the survival and biliary complications of SBR in LDLT.

Materials and Methods:

From January 1, 2009, to January 31, 2020, 1269 patients underwent LDLT at Kaohsiung Chang Gung Memorial Hospital. Among them, 55 Patients receiving LDLT with SBR were included in SBR group. One-to-two propensity score matching was performed by age, gender, blood loss, MELD score, Child-Pugh score, and operation period. 110 patients receiving one-stage biliary reconstruction (OSBR) LDLT are as OSBR group. Primary outcomes were graft and patient survival. Secondary outcomes were postoperative biliary complications.

Results:

A The mean follow-up was 63 months. Mean blood loss was 8987 mL in SBR group and 8582 mL in OSBR group. Patients in SBR Group had more abdominal operation history

(49.1% vs 25.5%; p=0.002), longer anhepatic time (86 vs 67 mins; p=0.007), and more intraoperative blood transfusion (32 vs 19 units of leukocyte-poor red blood cells; P=0.010) comparing to OSBR group. Roux-en-Y hepatico-jejunostomy was performed in 74.55% (SBR group) and 3.64% (OSBR group) (p<0.001). Patients receiving SBR-LDLT had higher incidence of sepsis (69.01% vs 43.64 %; p=0.002), intra-abdominal infection (60.0% vs 30.9%; p<0.001) and antibiotic duration (35 vs 18 days; p<0.001) compared to OSBR-LDLT. Biliary complication rates (30.9% vs 21.8%; p=0.203) and 1-and 5-year survival rates for graft (87.27%, 74.60% vs 83.64%, 72.71%; p=0.978) and for patient (89.09%, 78.44% vs 84.55%, 73.70%; p=0.752) were comparable between two groups.

Conclusion:

Despite a higher post-operation complication rate, the long-term survival and biliary outcome of SBR group are comparable. SBR is a life-saving procedure for patients in complex critical LDLT.

1120711

肝臟移植術後早期使用Sirolimus產生切口疝氣的經驗分享

王鈺鎮 林志哲 楊志權 林育弘 王世和 林廷龍 李韋鋒 詹宜嘉 王植熙 陳肇

隆高雄長庚紀念醫院

Experience sharing of Sirolimus in incisional hernia after liver transplantation

Yu-Chen Wang, Chih-Che Lin, Chee-Chien Yong, Yu-Hung Lin, Shih-Ho Wang, Ting-Lung Lin, Wei-Feng Lee, Yi-Chia Chan, Chih-Chi Wang, Chao-Long Chen

Kaohsiung Chang Gung Memorial Hospital

Purpose:

To improve long-term survival and renal function, there is a tendency to use sirolimus rather than calcineurin inhibitors (CNI) in patients, especially with a history of hepatoma and chronic kidney disease after liver transplantation. Therefore, CNI was revised to sirolimus in patients as soon as possible after liver transplantation. In the meantime, sirolimus is the risk factor for incisional hernia following transplantation. The purpose of this study was to summarize our experiences and the result of the timing relation between early sirolimus conversion and incisional hernia after living donor liver transplantation (LDLT).

Materials and Methods:

We reviewed our LDLT patients from January 2013 to December 2015. According to our policy, if patients have renal insufficiency (pre-transplant or early post-transplant) or hepatoma with poor prognostic factors, we switch CNI-based immunosuppression to sirolimus-based immunosuppression within one month after liver transplantation.

Results:

There were 106 patients with CNI-based immunosuppression (FK + mycophenolate) and 148 with sirolimus-based immunosuppression (sirolimus + FK) within one month after transplantation. During one year follow-up, there were 46 patients in the CNI-based group shifted to the sirolimus-based group and 16 patients in the sirolimus-based group shifted to CNI-based. One year after the transplant, we found the rejection rate in the switch-group (46

patients) and sirolimus-based group are significantly higher than in the CNI-based group (p=0.02). In addition, there is a higher incisional hernia rate in the sirolimus-based group compared to the others, especially when sirolimus was started within one month after transplantation (p=0.001). Regarding the oncological outcomes, there was no difference in recurrent hepatoma rate between these groups (p=0.3).

Conclusion:

Reduced dose of CNI combined with sirolimus could prevent renal dysfunction in renal insufficiency patients and provides protective oncological outcomes but pay the expense of rejection and incisional hernia, especially starting within one month after liver transplant.

肝臟移植前，以質子治療局部控制超過舊金山大學準則的肝癌：兩個病例報告

劉育伶[1] 陳肇隆[1] 王植熙[1] 林志哲[1] 王世和[1] 劉約維[1] 楊志權[1] 林育弘[1] 李韋鋒[1] 詹宜嘉[1] 洪國禎[1] 林煜程[1] 曾偉倬[1] 鄭任佑[2] 黃炳勝[2]

[1]高雄長庚紀念醫院一般外科 [2]高雄長庚紀念醫院放射腫瘤科

Proton Beam Therapy as Pretransplant Locoregional Therapy for Hepatocellular Carcinoma Presenting Beyond UCSF Criteria: A Report of Two Cases

Yu-Ling Liu[1] Chao-Long Chen[1] Chih-Chi Wang[1] Chih-Che Lin[1] Shih-Ho Wang[1] Yeuh-Wei Liu[1] Chee-Chien Yong[1] Yu-Hung Lin[1] Wei-Feng Li[1] Yi-Chia Chan[1] Kuo-Chen Hung[1] Yu-Cheng Lin[1] Wei-Juo Tzeng[1]
Jen Yu Cheng[2] Bin-Shen Huang[2]

[1]Division of General Surgery, Kaohsiung Chang Gung Memorial Hospital [2]Divsion of Radiation Oncology, Kaohsiung Chang Gung Memorial Hospital

Background Liver transplantation (LT) remains an effective treatment modality for patients with hepatocellular carcinoma (HCC). For those beyond Milan criteria, locoregional therapy to downstage and bridge to LT is widely accepted. Proton beam therapy (PBT) is an emerging locoregional treatment for HCC, carrying less risk of radiation-induced liver disease with its excellent dose distribution. Due to its novelty, limited literature has discussed the potential role of PBT for pretransplant locoregional therapy. In this article, we present two cases who received PBT prior to LT.

Case Presentation Case 1 A 61-year-old male with alcoholic and HCV-related liver disease presented with bilobar HCC in 2020. The main tumor was a 13.3cm S4-8 tumor with left portal vein (PV) thrombus, for which PBT irradiation was applied. Additional transarterial chemoembolization (TACE) and radiofrequency ablation (RFA) were performed for other satellite lesions. LT was performed in early 2022, and pathology found 23 HCCs in the diseased liver, 18 moderately differentiated and 5 completely necrotic. 6 months after LT,

his alpha-fetoprotein (AFP) level peaked, and positron emission tomography (PET) scan found femur bone metastasis, for which radiotherapy was performed. Case 2 A 65-year-old female with HCV-related liver cirrhosis was diagnosed with HCC in early 2020, with a 4.5cm S6 tumor and several daughter nodules. Two sessions of PBT were performed (7620cGy + 6600cGy). Pretransplant MRI found three viable tumors under 1.5cm, and PET scan found no FDG avid tumors. During transplantation, frozen section confirmed metastasis on the retroperitoneum and IVC, for which right adrenalectomy and wide excision of IVC were performed. 2 months later, portal vein stenosis and splenorenal shunt were noted, for which angioplasty and embolization were done. Her AFP level remains low.

Conclusion Patients with advanced HCC can be safely bridged to liver transplant with PBT. Close follow-up is needed, and more long-term treatment results are required to support this emerging therapy.

1120971

一位重症患者的肝臟移植

劉育伶 陳肇隆 王植熙 林志哲 王世和 劉約維 楊志權 李韋鋒 詹宜嘉 林育弘 洪國禎 林煜程 曾偉倬

高雄長庚紀念醫院一般外科

Liver Transplantation for a Critically Ill Patient

Yu-Ling Liu Chao-Long Chen Chih-Chi Wang Chih-Che Lin Shih-Ho Wang Yeuh-Wei Liu Chee-Chien Yong Wei-Feng Li Yi-Chia Chan Yu-Hung Lin Kuo-Chen Hung Yu-Cheng Lin Wei-Juo Tzeng

Division of General Surgery, Kaohsiung Chang Gung Memorial Hospital

Background For patients with end-stage liver disease (ESLD), liver transplantation (LT) is the only curative treatment. ESLD is often preceded by a period of chronic compensation, prone to dramatic deterioration with any minor insult. Meticulous care, preparation, and accurate timing of transplantation ensure smooth post-transplantation recovery in these patients. In this article, we present a case who suffered from multiple critical medical issues leading to acute decompensated liver failure. She was successfully treated with liver transplantation.

Case Presentation A 38-year-old female with alcoholic liver cirrhosis and a history of variceal bleeding suffered from severe anemia (hemoglobin: 5.1g/dL) due to blunt trauma with right thigh hematoma. She was admitted to a nearby hospital, where she developed pneumonia, bacteremia, and liver failure with hepatic encephalopathy. She was transferred to our intensive care unit two weeks later. Upon admission, labs were indicative of sepsis, renal insufficiency, and liver failure. Broad spectrum antibiotics, balanced fluid therapy, and medical portal flow modulation were initiated. She was intubated two days later and received percutaneous transhepatic gallbladder drainage (PTGBD) due to acute cholecystitis. Subsequently, she suffered from hemoperitoneum likely originating from transhepatic

drainage site, and EV bleeding. Her renal function and bleeding condition gradually stabilized with intensive care, and we prepared her for transplantation. After transplantation, she received urgent fasciotomy due to impending compartment syndrome of the right thigh. Bleeding was still noted from her right lower limb, so pelvic angiography was arranged, for which an active bleeder was identified and embolized. She was transferred to the general ward 25 days post-transplant and discharged 2 months after transplantation.

Conclusion With dedicated care and timely multidisciplinary teamwork, critically ill patients can safely undergo liver transplantation.