COMPARISON OF CLINICAL PROGNOSTIC INDICATORS (CPI) WITH MODEL FOR END-STAGE LIVER DISEASE (MELD) AND KING'S COLLEGE HOSPITAL (KCH) CRITERIA FOR MORTALITY PREDICTION IN ACUTE LIVER FAILURE

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Background: In a retrospective study, we demonstrated that the presence of any 3 of 6 clinical prognostic indicators (CPIs) were better than that of King's College Hospital (KCH) criteria and model for end-stage liver disease (MELD) score for predicting adverse outcome in patients with acute liver failure (ALF) due to acute viral hepatitis (*Liver Transplant* 2007;13:814–21).

Aim: To validate CPI and to compare CPI with MELD and KCH criteria in a cohort of patients with ALF prospectively.

Method: A total of 86 patients (mean age 26.8 years, SD 10.9 years) with ALF due to acute viral hepatitis were included between January 2008 and June 2011. Area under curve (AUROC), sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and diagnostic accuracy were calculated for CPI, MELD, and KCH criteria.

Result: Acute hepatitis E was the most common cause of ALF and was present in 31 (36%) patients followed by acute hepatitis A and B in 17 (19.7%) patients each, non-A–E in 15 (17.4%) and dual viral infection in 6 (6.9%; E and B in 4, A with B and E in 1 each). A total of 28 (33.5%) patients survived. Performance of various prognostic models is shown in Table 1 below.

Conclusion: CPI has better prognostic value than KCH and MELD criteria.

TUBERCULOSIS AND LIVING DONOR LIVER TRANSPLANTATION—A 7-YEAR EXPERIENCE FROM INDIA

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Introduction: Dealing with tuberculosis (TB) infection in living donor liver transplantation (LDLT) setting, as regards the selection and the management of recipients and donors in the peritransplant period, is challenging due to the lack of management guidelines and hepatotoxicity of anti-TB drugs.

Method: Of 682 LDLTs performed from January 2004 to December 2010 at our institute, 60 individuals (8.8%), 49 recipients (R group) and 11 donors (D group), had associated TB infection. Among recipients ($n=49$), 3 patients had anti-tubercular therapy (ATT)-induced acute liver failure (ALF) (Group A), 17 recipients had a past history of treated TB (Group B), 18 recipients were either receiving TB treatment or diagnosis was made during LT evaluation (Group C), in 5 recipients abdominal/hepatic TB was diagnosed either intra-operatively or in the explanted liver after transplant (Group D), while 4 patients developed TB postoperatively (Group E). Two recipients (Group F) received prophylactic ATT due to extrapulmonary TB in the donor. Among donors, 6 had a past history of treated TB (Group 1), 4 were either receiving TB treatment or diagnosis was made during workup (Group 2), whereas in 1 donor abdominal lymph node TB was detected intra-operatively (Group 3). We studied the short- and long-term outcomes in these individuals using our management protocol in the peritransplant period.

Result: Fifty-seven (95%) LDLTs were elective, whereas 3 were done for ALF. Recipients were predominantly male ($n=38$, 78%), whereas a majority of donors were female ($n=7$, 64%). In R group, the median age was 48 years (range 14–74 years), whereas in the D group it was 36 years (range 21–47 years). In 51 cases, the diagnosis of TB was definitive, whereas 9 recipients received presumptive ATT. The site of TB was pulmonary in 33% of recipients and 64% of donors. We used a modified ATT regimen consisting of Isoniazid, Pyrazinamide, Ethambutol and Ofloxacin for most recipients in the peri-operative period, whereas few

Table 1 Comparison between different prognostic models.

Prognostic model	AUROC (95% CI)	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Diagnostic accuracy (%)
CPI	0.754 (0.641–0.867)	75.8	75	86.2	60	75.5
MELD	0.673 (0.546–0.800)	81	53.5	78.3	57.6	72
KCH	0.620 (0.501–0.739)	27.5	96.4	94.1	39.1	50

AUROC: Area under curve; CPI: clinical prognostic indicators; KCH: King's College Hospital; MELD: model for end-stage liver disease; NPV: negative predictive value; PPV: positive predictive value.

recipients and donors with well-preserved liver function received the standard 4-drug ATT (Isoniazid, Rifampicin, Pyrazinamide and Ethambutol). Two recipients (4%) and 1 donor (8%) who were being evaluated for LDLT or donor hepatectomy and had concurrent TB infection could not undergo surgery. The median follow-up in recipients and donors was 21 months (range 1–54 months) and 12 months (range 7–54 months), respectively. Five recipients died in the follow-up period, none of the deaths were related to TB and 2 recipients developed ATT-related mild transient hepatitis. There were no TB or ATT-related complications in the donors.

Conclusion: The incidence of TB in prospective liver-transplant recipients and donors is high in TB-endemic areas. Using an effective, modified liver-safe anti-TB regimen allows an apt management of these cases and successful LT with good outcomes. TB should not be considered as an absolute contraindication for LDLT; however, adequate treatment of the disease and strict surveillance should be ensured. There may be a role of including diagnostic tests for TB in the routine evaluation of both recipients and donors in endemic areas.

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ACUTE LIVER FAILURE IN GIANT CELL HEPATITIS—SUCCESSFUL ADULT-TO-ADULT RIGHT LOBE LIVING-RELATED LIVER TRANSPLANTATION

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Background: Giant cell hepatitis is rare in adult population. It is characterized by the presence of multinucleated cells in the liver as an unusual non-specific tissue reaction to various stimuli. Clinical spectrum is variable and rarely may it present as an acute liver failure. Experience over acute liver failure in giant cell hepatitis and liver transplantation is limited.

Method: A 21-year-old male was admitted with complaints of fever, joint pain and maculopapular rash with progressively increasing jaundice. His hepatitis A IgM antibody

was positive and the rest of the viral markers (hepatitis B, hepatitis C, cytomegalovirus, Epstein bar virus, hepatitis E and human immunodeficiency virus) were negative. Bone marrow study was unremarkable and anti-nuclear antibodies (1:40 titers) were positive with non-specific M spike on immune electrophoresis. Transjugular liver biopsy showed liver necrosis with no evidence of granulomatous pathology or malignancy or atypical lymphoid cells. After 6 weeks of the onset of fever and 20 days of jaundice, the patient developed hepatic encephalopathy with prolongation of prothrombin time (PT/INR: 66.1/6.2). The patient underwent emergency living-related liver transplantation (LRLT) of right lobe with middle hepatic vein. Explanted liver histopathology revealed viable hepatocytes in zone 3 with extensive giant cell transformation and marked cellular cholestasis. Areas of collapse showed Kupffer cell prominence with bile stasis and increased chronic inflammatory cells. Portal areas showed a conspicuous ductular proliferation and a mild increase in chronic inflammation. He was started on Prednisolone, Mycophenolate mofetil, and Tacrolimus immunosuppression. The patient was discharged from the hospital after 26 days and is asymptomatic at follow-up. Postliver transplant liver function tests (LFTs) showed mildly elevated transaminases (Table 2).

Conclusion: Giant cell hepatitis rarely may present with ALF in adults and the LRLT shows early promising result.

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SUCCESSFUL THROMBOLYSIS OF EARLY ASYMPTOMATIC HEPATIC ARTERY THROMBOSIS AFTER RIGHT LOBE ADULT-TO-ADULT LIVING-RELATED LIVER TRANSPLANTATION

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Introduction and Background: Early hepatic artery thrombosis is a devastating complication after living-related liver transplantation (LRLT). Surgical revascularization or

Table 2 Postliver transplant liver function tests.

LFT	Pre-operative	LRLT	Discharge	1 month	4 months	10 months
Sr. Bill. (mg/dL)	5.9	18.96	1.38	0.74	0.77	1.0
AST (IU/L)	944	1469	39	64	42	30
ALT (IU/L)	647	774	72	123	115	42
SAP (IU/L)	141	57	110	55	51	63
GGT (IU/L)	110	22	64	55	30	18
Alb (g/dL)	1.9	2.4	3.1	4.0	4.0	3.8
INR	1.5	6.2	0.9	0.9		

AST: Aspartate aminotransferase; ALT: alanine aminotransferase; SAP: serum alkaline phosphatase; GGT: gamma-glutamyl transpeptidase; Alb: albumin; INR: international normalized ratio; LRLT: living-related liver transplantation; LFT: liver function tests.