CAUSES AND CONSEQUENCES OF LIVER TRASPLANTATION FOR FULMINANT HEPATIC FAILURE AT A SINGLE CENTER.

González Cibrián C; Fernández Martín C; Ruíz Torres I; Martín Grande A; Elías Martín E; Gajate Martín L.
Dept of Anaesthesiology & Intensive Care. Hospital Universitario Ramón y Cajal. Madrid

BACKGROUND AND GOAL

Fulminant hepatic failure (FHF) is an acute, life-threatening deterioration of liver function characterized by hepatic encephalopathy, coagulopathy and jaundice in patients without previous liver disease. It accounted for 8% of indications for liver transplantation (LT) in Europe ⁽¹⁾ according to the latest reports. The aim of this study is to evaluate outcomes after LT for FHF.

		NOT HF	HF	P
DONNOR DATA	AGE (years)	57,21±19,29	45,82±23,85	0,018
	SODIUM (mEq/L)	146,81±9,28	143,88±4,88	0,036
RECEPTOR DATA	BODY MASS INDEX (Kg/m²)	26,46±4,52	25,51±3,30	0,379
	AGE (years)	53,76±8,61	45,06±12,42	<0,01
	MELD	16,81±7,31	31,33±6,86	<0,001
BASELINE LABORATORY	INR	1,61±1,02	3,23±1,42	<0,01
	BILIRRUBIN (mg/dL)	5,54±7,82	25,77±14,24	<0,01
	PLATELETS (10³/mcL)	88,42±58,34	160,00±76,44	0,004
	PROTHROMBIN INDEX	58,17±20,69	21,39±10,95	<0,001
BLOOD TRANSFUSION (UNITS)	RED BLOOD PACKED	6,31±8,22	3,94±2,46	0,002
	PLATELETS	2,81±4,53	0,83±1,92	0,001
AFTER TRANSPLANTATI ON	MECHANICAL VENTILATION (hours)	32,73±140,76	184,44±560,08	0,267
	ICU stay lenght	8,93±19,79	12,39±22,14	0,469
	Time at the hospital floor	21,96±24,04	28,44±26,81	0,262
	Hospitalization time	30,89±31,65	40,83±29,18	0,191
SEX	MALE	357 (79,2%)	5 (27,8%)	<0,001
	FEMALE	94 (20,8%)	13 (72,2%)	
PREVIOUS ASCITES	NO	190 (42,1%)	12 (66,7%)	0,039
	YES	261 (57,9%)	6 (33,3%)	
PREVIOUS ENCEPHALOPATHY	NO	269 (59,6%)	5 (27,8%)	0,007
	YES	182 (40,4%)	13 (72,2%)	
UPPER GASTROINTESTINAL BLEEDING	NO	290 (64,3%)	18 (100%)	0,002
	YES	161 (35,7%)	0	
PREVIOUS PERITONITIS	NO	363 (80,5%)	18 (100%)	0,038
	YES	88 (19,5%)	0	
PREVIOUS STATUS	HOME	369 (81,8%)	2 (11,1%)	<0,001
	HOSPITALIZATION	60 (13,3%)	6 (33,3%)	
	ICU	22 (4,9%)	10 (55,6%)	
HCV	NEGATIVE	195 (43,2%)	18 (100%)	<0,001
	POSITIVE	256 (56,8%)	0	
CMV	NEGATIVE	49 (10,9%)	8 (44,4%)	<0,001
	POSITIVE	402 (89,1%)	10 (55,6%)	
EBV	NEGATIVE	74 (16,4%)	8 (44,4%)	0,002
	POSITIVE	377 (83,6%)	10 (55,6%)	

Table I: Univariate analysis for FHF

Figure I: Survival curve

CAUSES OF FHF

Figure 2: Causes of FHF

MATERIAL AND METHODS

Data from LT performed between January 2002 and December 2014 at our centre had been retrospectively analysed. We have studied the distribution of FHF as an indication for LT over the past few years, the differences in its outcome comparing to other indications of LT and the aetiology of this acute syndrome at our centre.

	NOT HF	HF	P
REPERFUSION SYNDROME	121(27,2%)	1(5,6%)	0,028
REINTUBATION	86(19,4%)	3(16,7%)	0,530
TRACHEOSTOMY	22(5%)	2(11,1%)	0,239
BLEEDING	79(17,8%)	3 (16,7%)	0,598
REINTERVENTION	84 (19%)	3 (17,6%)	0,593
RETRASPLANTATION	17(3,8%)	1(5,6%)	0,519
PRIMARY GRAFT DISFUNCTION	14 (3,2%)	0 (0%)	0,568
PORTA THROMBOSIS	7 (1,6%)	1 (5,6%)	0,275
ARTERY THROMBOSIS	21 (4,7%)	1 (5,6%)	0,592
BILIAR COMPLICATIONS	87 (19,6%)	5 (27,8%)	0,279
NEUROLOGICAL COMPLICATIONS	66 (14,9%)	3 (16,7%)	0,522
INFECTION	153 (34,5%)	11 (61,1%)	0,021
CMV	56 (12,7%)	8 (44,4%)	0,001
ASPERGILLUS INFECTION	26 (5,9%)	0 (0%)	0,342
ICU READMISSION	81 (18,3%)	6 (33,3%)	0,103
RENAL REPLACEMENT THERAPY	114 (25,5%)	8 (44,4%)	0,069

Table 2: Complications associated to FHF

RESULTS AND DISCUSSION

A total of 469 patients who underwent LT were analysed. FHF was the indication in 18 of these patients (3,8%). The cause for FHF was unknown in 6 patients (33,3%). Viral hepatitis was found in 6 patients (33,3%): acute hepatitis B (16,6%), acute hepatitis E (11,1%) and acute hepatitis A (5,5%). Autoimmune hepatitis was diagnosed in 3 patients (16,6%), and drug related hepatic failure in another 3 (16,6%).

We found some statistical differences between FHF patients and those who underwent a LT for another cause: age (45,1±12,4 vs. 53,8±8,6 vs.; p<0,01), female gender (72,2% vs. 27,8%). Some basal data were also significantly different: bilirubin (25,8±14,2 vs. 5,5±7,8; p<0,01), INR (3,2±1,4 vs. 1,6±1,1; p<0,01), prothrombine index (21,4±10,9 vs. 58,2±20,7; p<0,01), platelets amount (160.000 ±75436 vs. 88420±58342; p=0,01), MELD classification (31,33±6,8 vs. 16,8±7,3; p<0,01).

During the surgery there were also some differences between the two groups: the number of red cell transfused (3,9 ± 2,5 vs. 6,3±8,2; p<0,01) and the platelets units infused (0,8±1,9 vs. 2,8±4,5; p<0,01).

We found statistical association between FHF and reactivation of cytomegalovirus (OR 5,48 (95CI 2,07-14,48); p<0,01) and infections (OR 2,98 (95CI 1,13-7,86); p= 0,02): pneumonia, cholangitis, abdominal infection and catheter related infection. Survival proportion after one year was found to be similar in patients with FHF and in patients with other indications for LT (82% vs. 77%; p=0,2); this result is probably not significant because our sample size is too small.

CONCLUSION

Short-term survival after LT for FHF is similar to that of LT for other causes despite higher infectious complications rate.

1. Adam, R., Karam, V., Delvart, V., O’Grady, J., Mirza, D., Klempnauer, J., y otros. (2012). Evolution of indications and results of liver transplantation in Europe. A report from the European Liver Transplant Registry. *J Hepatol*, 57, 675-688.