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Letter to the editor

Life expectancy after liver transplantation for acute hepatic necrosis

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Acute hepatic necrosis (AHN) – also referred to as acute liver failure, fulminant hepatic failure, fulminant hepatic necrosis, and fulminant hepatitis – refers to severe and acute liver injury in a patient without cirrhosis or pre-existing liver disease. Without rapid correction, if possible, of the precipitating causes, short-term mortality is high. Liver transplantation in AHN is uncommon, representing only 3% of all such transplants.[1]. Long-term survival of those who received transplantation has apparently not been studied. In the present work we compute life expectancies, and also examine whether survival has improved since 2002.

The data and methods used here are the same as those in the prior studies.[2,3] Briefly, we analyzed de-identified data from the OPTN database, which contains information on 130,665 first time, single-organ liver transplants in the USA. We restricted attention to patients meeting three criteria: (1) reason for transplant given as AHN (etiology codes 4100 to 4110), (2) age 35 to 74 years, and (3) transplanted during the MELD era, calendar years 2002 to 2018. Within the overall group we examined various subsets with a sufficient number of patients: those whose AHN was due to drug toxicity (code 4100, "Drug"), Hepatitis Type C (4104), and Hepatitis Type B-HBSag+ (4102). Remaining causes were combined as "Other".

Demographic and medical characteristics of the patients are given in Supplemental Table 1, and the multivariate Cox (proportional hazards regression) survival models in Supplemental Table 2.

The Drug and Type C groups had very similar adjusted long-term survival (hazard ratio [HR] = 0.98, $P = 0.85$), and were combined in what follows. That the "Drug" group had a worse prognosis than those with Type B Hepatitis (multivariate HR = 1.41, $P<0.0001$) was expected, as such patients are more likely to have high (rather than low) grade necrosis,[4] which is correlated with survival[5] We are not aware of any obvious reason that the Type C group had similarly poor survival

Table 1
Life expectancies based on the multivariate model of Supplemental Table 2.

		Males				Females			
Starting Time	Current Age	Drug / Type C	Type B	All Others	GP	Drug / Type C	Type B	All Others	GP
From tx	40	17	24	21	39	19	26	23	43
	50	14	20	18	30	16	22	20	33
	60	12	17	15	22	13	19	17	25
	70	10	14	13	15	11	16	14	17
1-yr post	41	18	25	22	38	21	27	25	42
	51	16	21	19	29	18	23	21	33
	61	14	18	16	21	15	20	18	24
	71	12	16	14	14	13	17	15	16
5-yrs post	45	16	22	20	34	19	25	22	38
	55	14	19	17	26	16	21	19	29
	65	12	16	14	18	13	17	16	21
	75	10	13	12	11	11	14	13	13

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compared with Type B, though it may be noted that Hepatitis C in AHN does not often manifest in isolation[6] Over the 17-year study period, there was evidence of improved survival (HR = 0.96 per calendar year; $P<0.0001$). As in prior studies, the improvement appeared to be limited to the first few years after transplant.

The resulting life expectancies by age, sex, and subset are shown in Table 1 below. Overall, life expectancy was reduced from that of the general population (GP), and varied according to age, medical risk factors, and health status. Such information may prove helpful in medical decision-making regarding treatment for both liver disease and other medical conditions.

Disclaimer

The data reported here have been supplied by the United Network for Organ Sharing as the contractor for the Organ Procurement and Transplantation Network. The interpretation and reporting of these data are the responsibility of the authors and in no way should be seen as an official policy of or interpretation by the OPTN or the U.S. Government.

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Declaration of Compeing Interest

None.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.liver.2021.100066.

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