

# Improved Liver Function in Patients with Liver Cirrhosis After Autologous Bone Marrow Cell Therapy

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**Background:** Liver transplantation is the only definitive therapeutic option available for patients with chronic end-stage liver disease. However, a shortage of suitable donor organs and requirement for immunosuppression restrict its usage, evidence is growing in support the role of stem cells as an attractive alternative in treatment of liver diseases.

**Methods:** Twenty patients on the liver transplant waiting list were enrolled to receive cell therapy and completed 1 year follow up. Median age 65 years old, M/F ratio was 15/5 Autologous bone marrow mononuclear cells were infused into the hepatic artery; liver function tests/scores were chosen as endpoints to assess efficacy. Autologous bone marrow (BM; 400 ml) was isolated from the ilium under local anesthesia. Mononuclear cells (MNCs) were separated by cell washing and were infused into the hepatic artery. Median numbers of MNC & CD34+ cells were  $120 \times 10^8$  &  $230 \times 10^6$  respectively. Patient's characteristics are shown in table 1.

**Table 1.**

Median age (years old)	67
F/M ratio	4/16

**Results:** After a median time of 3 weeks, patients had relief of ascitis and encephalopathy. Significant improvements in serum albumin levels, total protein, bilirubin and liver enzymes were observed at 1, 6 and 12 months after ABMC therapy ( $p < .05$ ). Significantly improved Child-Pugh and Meld scores were seen at 4 and 48 weeks ( $p < .05$ ). No major adverse effects were noted. All patients were evaluable but one who died 1 month after transplantation. Differences ( $\Delta$ ) and statistic difference ( $p$ ) between basal values 4, 24 and 48 months follow-up are shown in table 2.

**Table 2.**

**Conclusions:** Infusion of ABMC into the hepatic artery is safe and feasible in LC. It is associated with significant improvement in symptoms and liver function tests/scores.

## Resultados

PACIENTE 1		
	BASAL	1 Year FOLLOW UP
INR	1.42	1.19
PROTEINA	5.2	6.4
ALBUMINA	2.57	3.57
CREATININA	1.7	1.5
BILIRRUBINA	1.99	0.52
ASCITIS	Yes 10 lit	Mild
Encefalopatía	Yes	NO

## Resultados

PACIENTE 2		
	BASAL	1 Year FOLLOW UP
INR	1.5	1.3
PROTEINA	6.6	7.0
ALBUMINA	3.7	3.7
CREATININA	0.9	0.9
BILIRRUBINA	4.7	1.6
ASCITIS	Yes 3 lit	Mild
Encefalopatía	Yes	NO