Liver transplantation due to fulminant HBV infection in individuals whose HIV infection was diagnosed during pretransplant evaluation: Report on two cases

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Background:
Liver transplantation (LT) in patients living with HIV (PLHIV) is part of routine clinical care. Most cases have end-stage liver disease or hepatocellular carcinoma, and LT recipients have known HIV infections, are on antiretroviral therapy (ART) and have undetectable plasma HIV RNA viral loads and CD4+ T cell counts above 100 cells/mm^3 (1,2). In contrast, there is limited information on LT in patients with acute liver disease whose HIV infection is diagnosed during pretransplant evaluation (3). This study aims to describe the evolution of two successful LT patients diagnosed with HIV infection in the context of fulminant HBV hepatitis.

Results:
CASE 1:
A 50-year-old male was admitted to the emergency room, due to liver failure, needing LT. He was an untreated hepatitis B surface antigen (HBsAg) carrier since childhood. HIV-1 infection was diagnosed with no genotypic antiretroviral resistances. CD4 was 384 cells/mm^3. ART with TDF and FTC plus raltegravir was started. The evolution of plasma HBV and HIV viral load and CD4+ T cell counts is depicted in the **Table 1**. The immunosuppressants used were basiliximab, mycophenolate, a tapering dose of corticoids and tacrolimus. HBV immunoglobulin (HBIG) was used monthly for two years. Four years later, plasma HIV and HBV were both undetectable, CD4 was 268 cells/mm^3 and graft function was normal.

CASE 2:
A 44-year-old male was admitted, due to fulminant HBV liver failure, needing an emergent liver transplant. HIV-infection was diagnosed with no genotypic antiretroviral resistances. CD4+ T cell count was 82 cells/mm^3. ART, immunosuppressants and HBV prophylaxis were the same. The evolution of plasma HBV and HIV viral load and CD4+ T cell counts is depicted in the **Table 1**. Seven years later plasma HIV and HBV were both undetectable, CD4 was 549 cells/mm^3 and graft function was normal.

Table 1: Main characteristics of both patients HIV-HBV

	CASE 1			CASE 2		
	HBV (U/ml)	HIV (copies/ml)	CD4/mm^3	HBV (U/ml)	HIV (copies/ml)	CD4/mm^3
Before LT	1,580,000	162,000	384	35,328,501	41820	82
+1m	34.9	ND	129	1370	<50	321
+3m	17.5	<50	200	565	<50	277
+6m	<10	<50	236	426	<50	329
+12m	<10	<50	230	517	<50	454
+24m	<10	<50	339	<10	<50	309
+3y	<10	<50	262	153	<50	364
+4y	<10	<50	268	28	<50	421
+5y				< 10	<50	425
+6y				<10	<50	544
+7y				<10	<50	549

Conclusion:

LT can be safely performed in individuals with fulminant HBV infection whose HIV-infection is diagnosed during pretransplant evaluation and who therefore do not meet the HIV-dependent criteria for solid organ transplantation. TDF plus FTC and raltegravir allowed rapid control of HIV and HBV viremia, and both patients had very good short- and long-term results.

References:
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