

# Chronic Hepatitis E-genotype 3 infection in transplant recipients: A single Kidney and Pancreas transplant centre experience.

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## Introduction:

Hepatitis E virus-genotype 3 (HEV), is endemic in the UK and has now become the major cause of enterically transmitted viral hepatitis. HEV3 evolves to chronic hepatitis in 65% and cirrhosis in 10% of immunosuppressed patients (1), but incidence and prevalence are unknown. HEV can be transmitted by the faecal-oral route and blood products and infection is underdiagnosed in Solid Organ Transplant recipients (SOT) due to subacute disease onset and delayed or even absent seroconversion. No established treatment exists, although immunosuppression reduction and ribavirin have been shown to be effective (2).

## Methods and Results:

Between 2010-2016, seven patients were investigated for persistently raised ALT and were diagnosed with HEV (Table). Retrospective analysis of stored samples identified 6 patients with chronic HEV3-infection (HEV-RNA detection for more than 3 months prior to diagnosis). Notably, 2 chronic-HEV patients had negative IgM/IgG at the time of diagnosis. The source of infection was temporal with a transplant in 3 and food in 4 patients. To date, 5 patients have been treated with ribavirin, 4 achieved HEV-clearance but 2 out of 4 have relapsed. Patient 7 unfortunately died with active HEV.

#	Age at Dx/ Gender	Tx	Induction/ Maintenance Immunosupp.	AR	IgM/ IgG at Dx	Months after Tx	Duration HEV-RNA Positivity (months)	Peak ALT/ GGT (IU/L)	Treatment	Time to HEV- clearance/ Treatment duration (months)	Relapse/ Treatment
1	45/F	SPK	Alemtuzumab/ FK	N	+/+	82.5	30.1	282 133	Ribavirin	9.1/ 12.5	N
2	51/F	K	Alemtuzumab/ Sirolimus	N	-/-	36	8.6	557 134	Ribavirin	1.2/ 4	Y Ribavirin
3	46/M	SPK	Alemtuzumab/ FK (MMF)	N	+/-	25.5	11.8	263 61	Ribavirin	2.4/ 6	N
4	36/F	K	Alemtuzumab/ Pred, FK, AZA	Y	+/+	82.5	3	169 40	AZA stop Ribavirin	Active HEV On going day 21	-
5	59/M	K	Alemtuzumab/ (Pred) FK, MMF	Y	-/-	46.1	>6.8 Lost to FU	N/A	MMF stop	Active HEV	-
6	60/F	K	Alemtuzumab/ FK	N	+/+	1.5	29.8	337 663	Ribavirin	1.5/ 3	Y Ribavirin
7	51/M	K/PAK	Alemtuzumab/ Pred, FK, MMF	Y	+/+	6.5	>48.2	347 149	MMF stop	Active HEV	-

## Discussion:

HEV should be suspected in all immunosuppressed patients with unexplained transaminitis noting that IgM/IgG antibodies may be falsely negative. The optimal treatment and duration remains to be determined. Blood products for SOT recipients should be HEV-tested as per SaBTO guidelines. Further studies are needed to determine regional incidence and prevalence.

(1) Kamar N, Garrouste C, Haagsma EB, et al. Factors associated with chronic hepatitis in patients with hepatitis E virus infection who have received solid organ transplants. *Gastroenterology* 2011;140:1481-9.  
 (2) Kamar N, Izopet J, Tripon S, et al. Ribavirin for Chronic Hepatitis E Virus Infection in Transplant Recipients. *N Engl J Med* 2014;370:1111-20.