

Prevalence and incidence of HCV and HBV in ESRD: data from the REIN registry (France)

Corinne Isnard Bagnis^{1,5}, Luc Haudebourg², Cécile Couchoud³, Patrice Cacoub^{4,5,6,7}, Sophie Tezenas du Montcel^{2,8}

¹ AP-HP, Groupe Hospitalier Pitié-Salpêtrière, Department of Nephrology, F-75013, Paris; ² Sorbonne Universités, UPMC Univ Paris 06 UMR_S1136 and INSERM UMR_S 1136, Institut Pierre Louis d'Epidémiologie et de Santé Publique, F-75013, Paris, France; ³ Agence de Biomédecine, Paris, France; ⁴ Sorbonne Universités, UPMC Univ Paris 06, UMR 7211 ⁵ Inflammation-Immunopathologie-Biothérapie Department (DHU i2B), F-75005, Paris, France. ⁶ INSERM, UMR_S 959, F-75013, Paris, France. ⁷ AP-HP, Groupe Hospitalier Pitié-Salpêtrière, Department of Internal Medicine and Clinical Immunology, F-75013, Paris, France. ⁸ AP-HP, Groupe Hospitalier Pitié-Salpêtrière, Biostatistics Unit, Paris, F-75013, France.

Objectives:

HBV and HCV are the two viruses responsible of chronic hepatitis. They are responsible of 57% of cirrhosis (respectively 30% and 27%) and 78% of hepatocellular carcinoma (respectively 53% and 25%) with a global mortality around 930,000 deaths per years. The worldwide prevalence of HBV and HCV in the general population are estimated respectively to 3.7% and 2.8%^{1,2,3}.

ESRD patients have an increased risk to be infected by blood-borne virus like HBV and HCV. This can be explained by the invasiveness of the dialysis procedure and the multiple blood transfusion. In the literature, the prevalence of HBV and HCV in this particular population goes respectively from 2% to 4.1% and from 5% to 15%^{4,5}. In France, the latest large scale study performed to estimate the prevalence of HBV and HCV was achieved by Meffre and al. in 2004⁵. The prevalence of HCV infection among dialysis patients was estimated to 9.5% in the European study DOPPS⁶.

Methods:

In a multicenter cohort study based on the National French prospective registry for ESRD patients (REIN), we extracted data for patients who initiated dialysis and/or who had been put down on the kidney transplant waiting list (January, 2005 to December, 2013). A positive HBs Ag and/or a positive HCV RNA defined HBV and HCV infections.

Table 1: HBV and HCV prevalence according to the presence of other viral co-infection.

	Total patient	HBV prevalence	HCV prevalence
No co-infection	For HBV : n = 71905 For HCV : n = 71525	0.74% (95% PI: 0.68 – 0.81)	1.27% (95% PI: 1.19 – 1.35)
Co-infection with HBV	n = 615		8.94% (95% PI: 6.81 – 11.48)
Co-infection with HCV	n=1026	5.36% (95% PI: 4.06 – 6.92)	
Co-infection with HIV	n = 470	8.94% (95% PI: 6.52 – 11.89)	15.53% (95% PI: 12.38 – 19.13)
Co-infection with HBV and HIV	n = 42		33.33% (95% PI: 19.57 – 49.55)
Co-infection with HCV and HIV	n = 73	19.18% (95% PI: 10.90 – 30.08)	

Figure 1: HBV and HCV prevalence by age group.

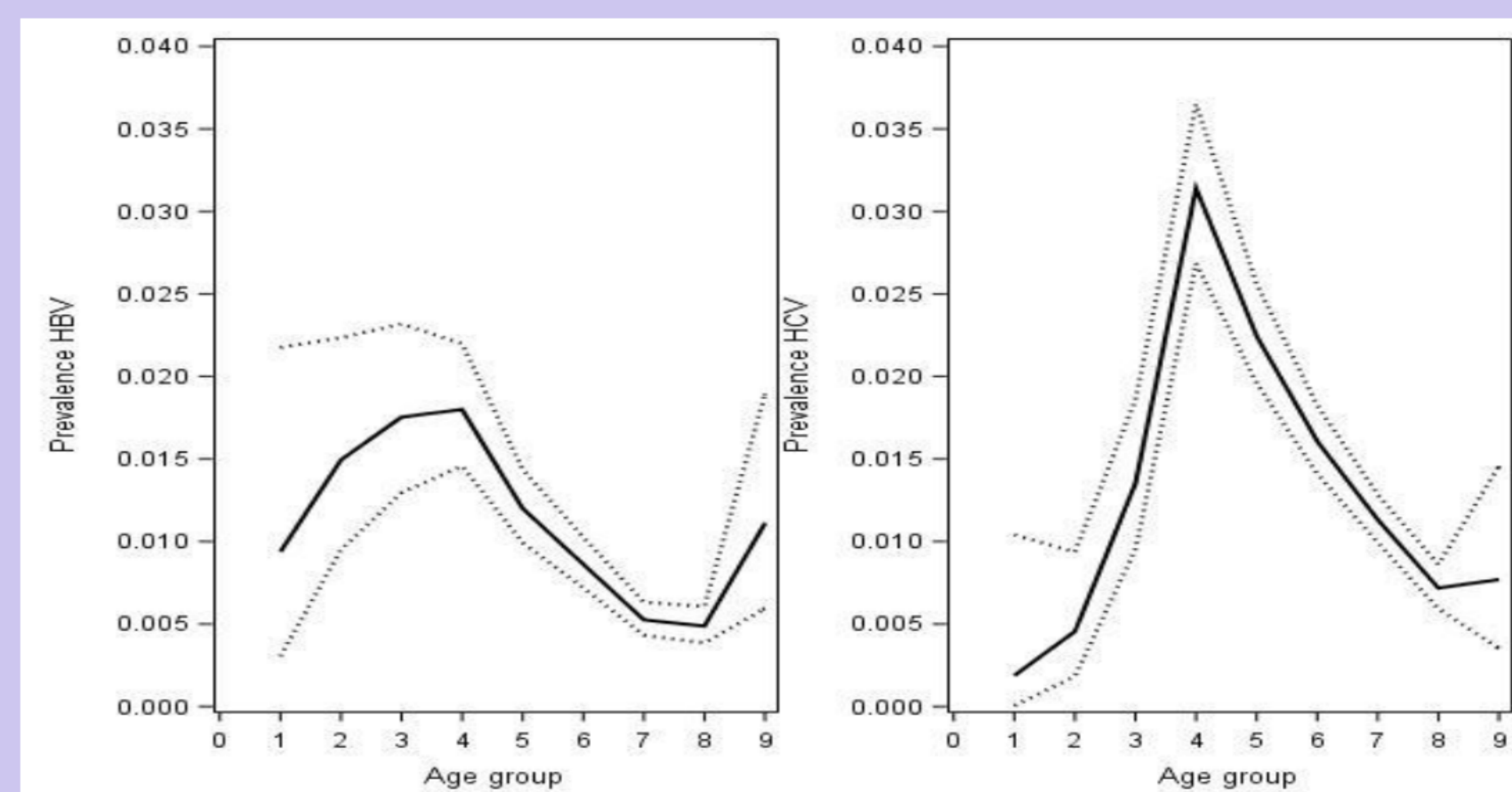


Figure 2: HBV and HCV prevalence by year of RRT start.

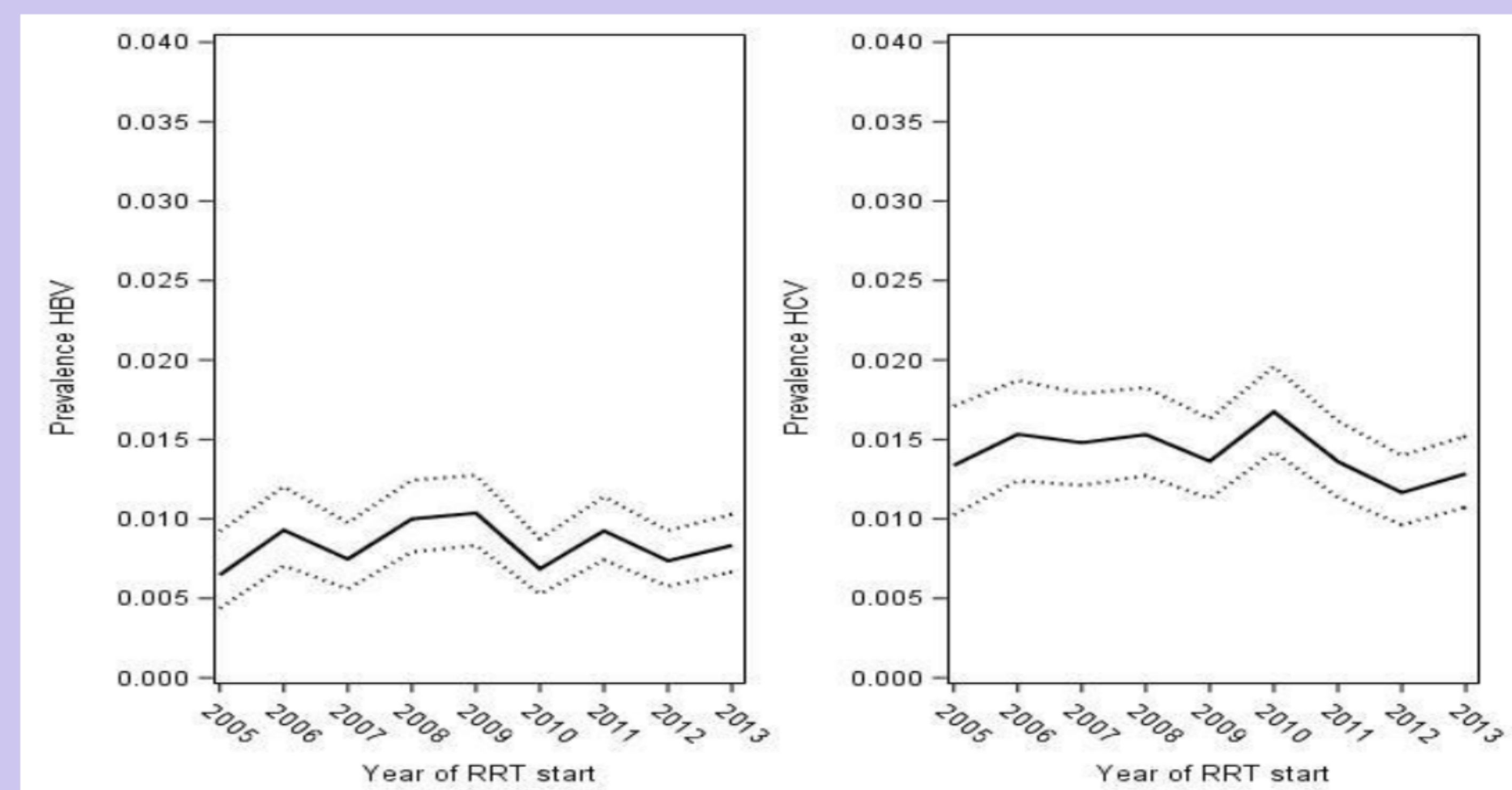
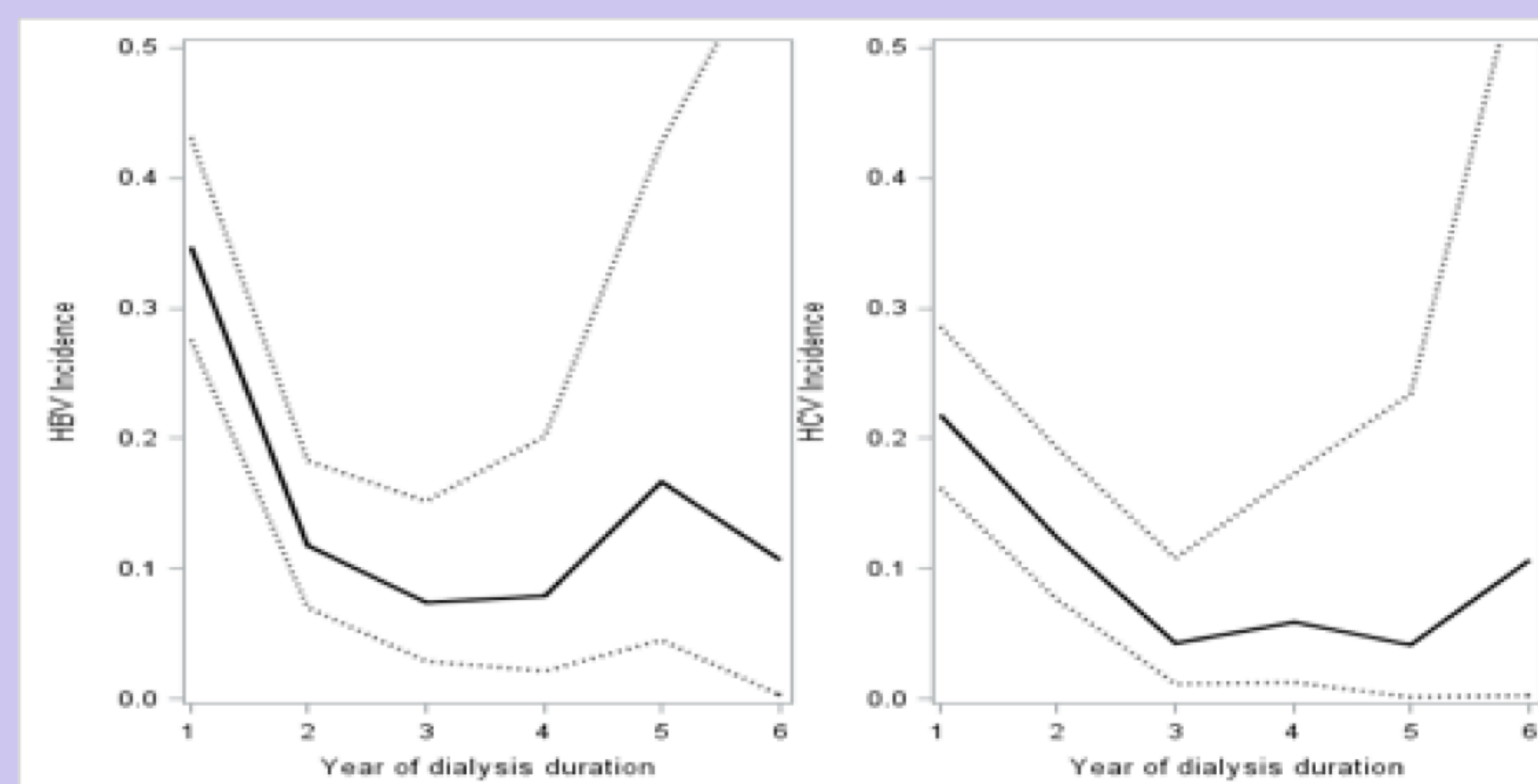


Figure 3: HBV and HCV incidence by years of dialysis duration.



Results:

72,948 patients entered the registry, 45,591 men (62.5%), (mean age 67.0 ± 16.0 yrs). At inclusion, 615 patients were HBV and 1,026 HCV infected.

The prevalence of HBV and HCV infections were 0.84% (95% precision interval (PI): 0.78 – 0.91) and 1.41% (95% PI: 1.32 – 1.49) respectively.

The prevalence of HBV infection by age group increased progressively until a maximum rate at 1.80% (95%PI: 1.46 – 2.20) in the 4th decade, then regularly decreased. Same profile was observed for HCV prevalence, with a maximum rate at 3.14% (95% PI: 2.68 – 3.65) in the 4th decade. 13,609 (18.7%) patients received a kidney graft over follow-up, (mean age at first renal transplant 50.9 ± 15.5 yrs).

During follow up, we identified new HBV or HCV infections in 117 and 81 patients, respectively. Overall incidence for HBV and HCV infections between 2005 and 2013 were 7.6 per 10000 person year (95% PI: 6.2 – 9.0) and 5.3 per 10000 person year (95%PI: 4.1 – 6.5) respectively. During the 1st year of dialysis, the incidence of HBV infection was 0.35% (95% PI: 0.28 – 0.43) and that of HCV 0.22% (95% PI: 0.16 – 0.29). The incidences decreased during the 2nd and the 3rd year of dialysis for both infections.

Conclusions:

Our data highlights the need for therapy for more than 1000 patients (HCV), stress the need for sustained systematic immunization campaigns (HBV) and highlights the persistence of possible HBV/HCV new hand-borne nosocomial cases.

References:

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