

RESPONSE TO HEPATITIS B VACCINE AMONG HEMODIALYSIS PATIENTS

A SINGLE CENTRE EXPERIENCE

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Introduction

Hemodialysis patients are particularly vulnerable to hepatitis B virus (HBV) and have less sustained and lower antibody response to HBV vaccination. The aim of this study was to identify factors that could affect this response.

Patients and methods

We retrospectively studied n=105 patients (42 women and 63 men) on chronic hemodialysis, who had initial titer of antibodies against the surface antigen of HBV (HBsAb) less than 10 IU/l. All patients received initially four doses of recombinant vaccine at months 0,1,2 and 6.

Results

After the initial four-doses vaccination 52 patients (49,5%) developed HBsAb titer ≥ 10 IU/l, 29 of which (27,6%) developed very high HbsAb levels (≥ 100 IU/l). Responders (HBsAb ≥ 10 IU/l) were younger (54,7 \pm 16 versus 62,5 \pm 13 years, $p=0,026$, figure 1). The achieved HBsAb titer correlated to the age of the patients ($r=-0,353$, $p=0,002$, figure 2) and to dialysis adequacy (urea reduction ratio, $r=0,294$, $p=0,024$, figure 3). Lower response rates were observed among smokers (32,1% versus 55,8%, $p=0,032$, figure 4). Furthermore, men tended to respond more frequently (55,6%) than women (40,5%, $p=0,130$). Finally, obese patients tended to achieve less frequently high titers HBsAb (≥ 100 IU/l, 17,9% versus 32,4%, $p=0,140$). Five out of 18 (27,8%) non-responders responded to an additional dose of HBV vaccine, whereas 11 out of 18 non-responders (61,1%) responded to a second course of four doses. The mean drop of the HbsAb titer after successful vaccination was $-49,3\% \pm 32\%$ per year. Men tended to have a faster rate of decline of the HbsAb titer ($-56,2\% \pm 33\%$) compared to women ($-41,8\% \pm 28\%$ per year, $p=0,062$).

Figure 1

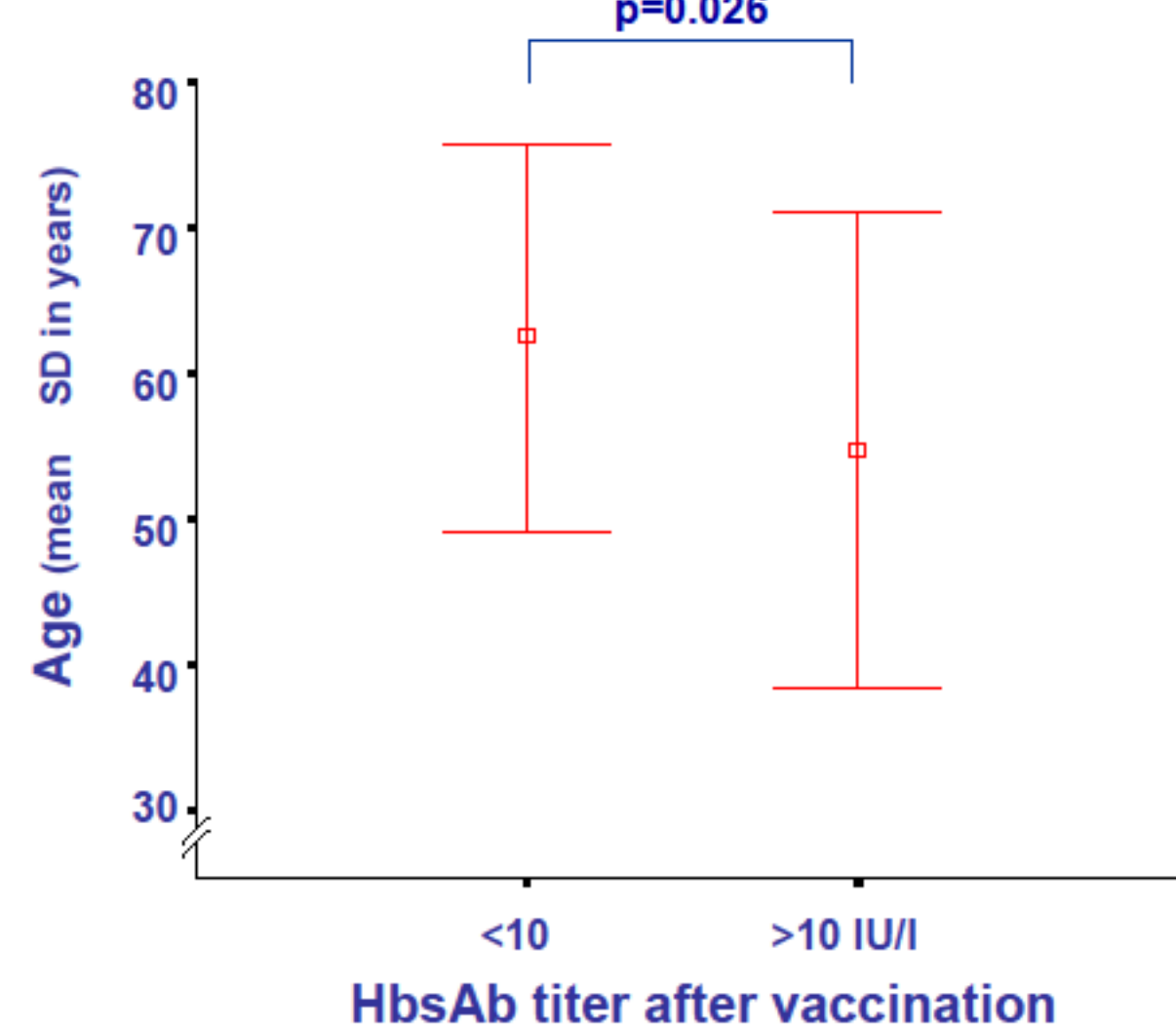


Figure 2

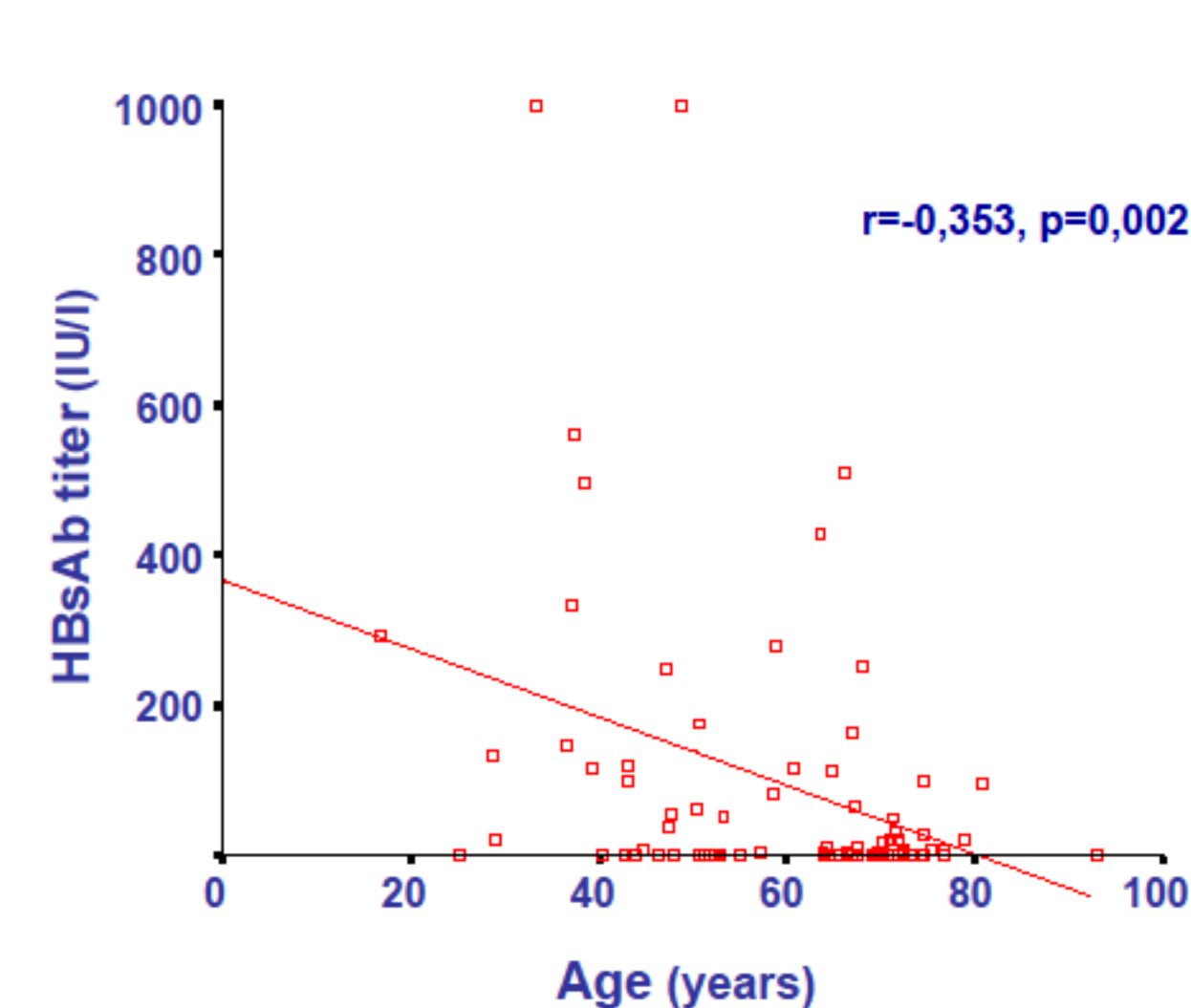


Figure 3

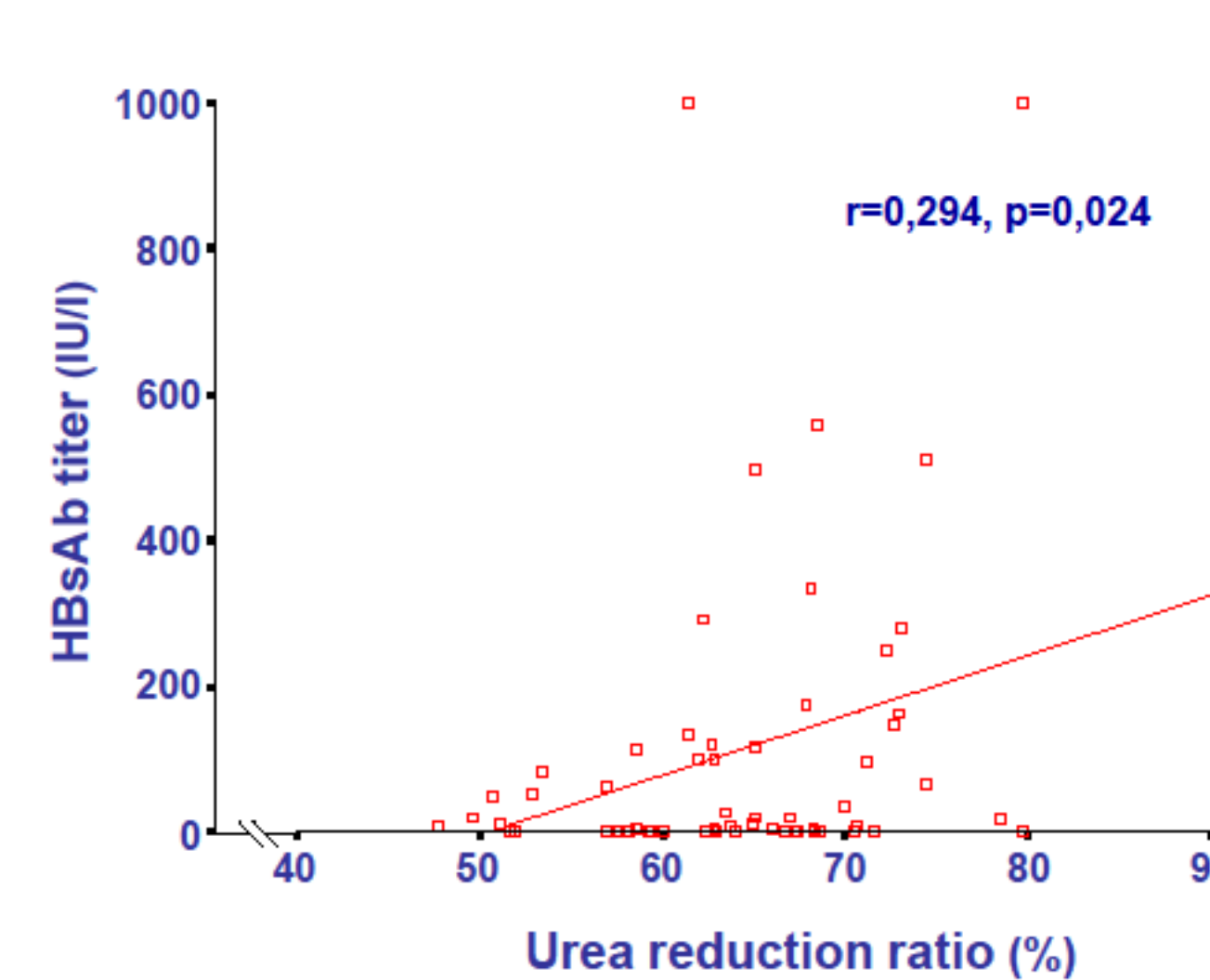
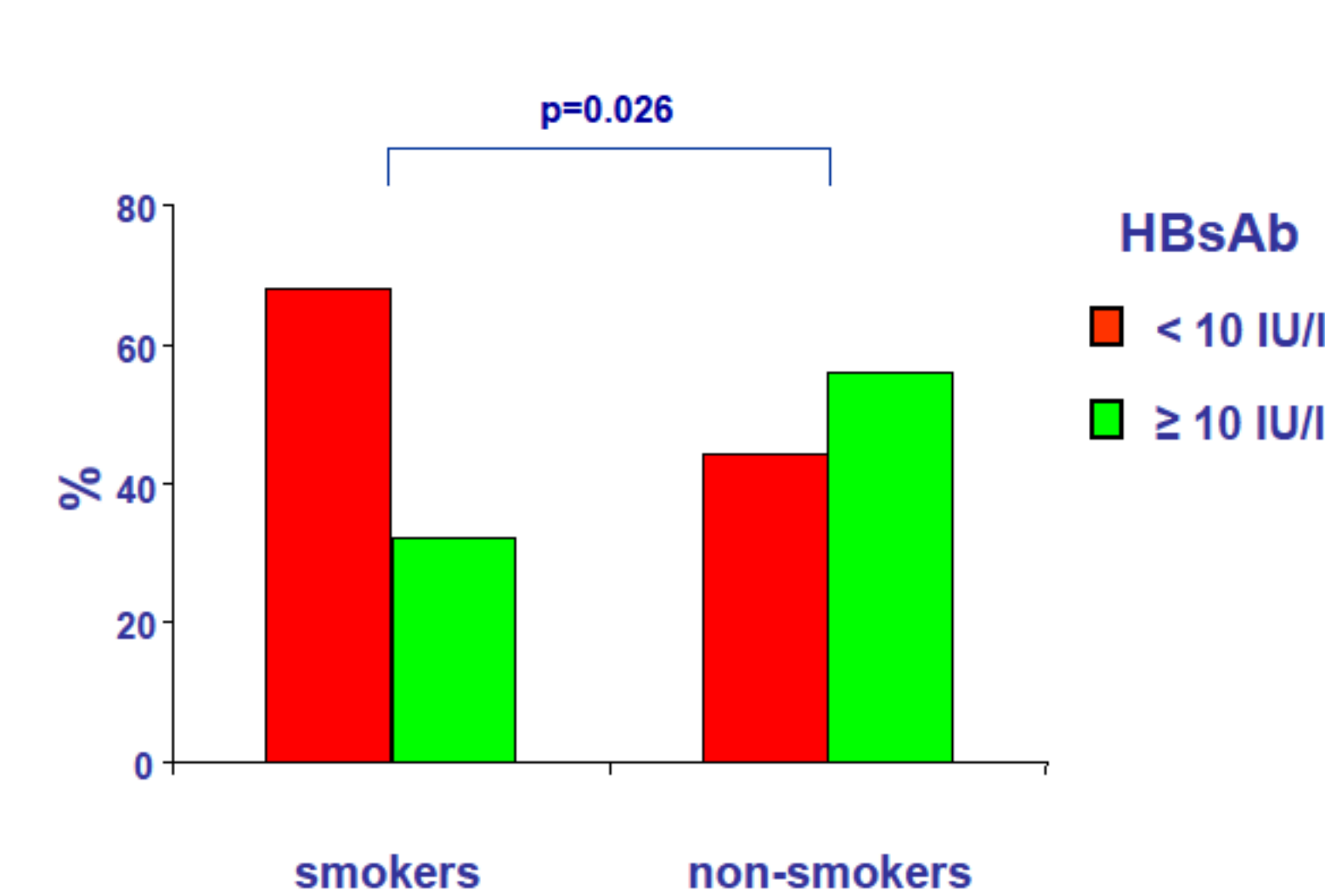


Figure 4



Conclusions

Patients on chronic dialysis show reduced response rates to vaccination against HBV even when the enhanced four doses schema is administered. The age of the patients is the main factor influencing the response rate. A substantial number of patients responds to repeated vaccination. However even after successful vaccination, hemodialysis patients experience a fast drop of the HBsAb titer.

