

# RESULTS OF VACCINATION AGAINST HEPATITIS B IN PERITONEAL DIALYSIS PATIENTS

Edgars Volosnuhins <sup>1</sup>, Viktorija Kuzema <sup>2,3</sup>, Anna Silda <sup>2,3</sup>, Ilze Puiide <sup>2,3</sup>, Aivars Pētersons <sup>2,3</sup>.

<sup>1</sup>Internal medicine/ Nephrology department, St.Barbara Klinik Hamm-Hessen, Hamm, Germany; <sup>2</sup>Nephrology center, P. Stradins Clinical University hospital, Riga, Latvia; <sup>3</sup> Department of Internal diseases, Riga Stradiņš University, Latvia

## Introduction

Vaccination against hepatitis B (HBV) is recommended for all chronic kidney disease patients as early as possible. In the later stages of the disease the primary response to the vaccination with protective anti-HBs titer (>10 mIU/mL) is significantly lower.

The reported successful seroconversion rate in dialysis patients varies from 50% to 86%. However, the protective seroconversion rates in a healthy population after 3 vaccines are > 90%.

## Aim

The aim of this study was to analyse primary anti-HBs response rates in peritoneal dialysis (PD) patients vaccinated against hepatitis B, protective anti-HBs levels among primary responders during one year after vaccination and possible clinical and demographic factors affecting the outcome.

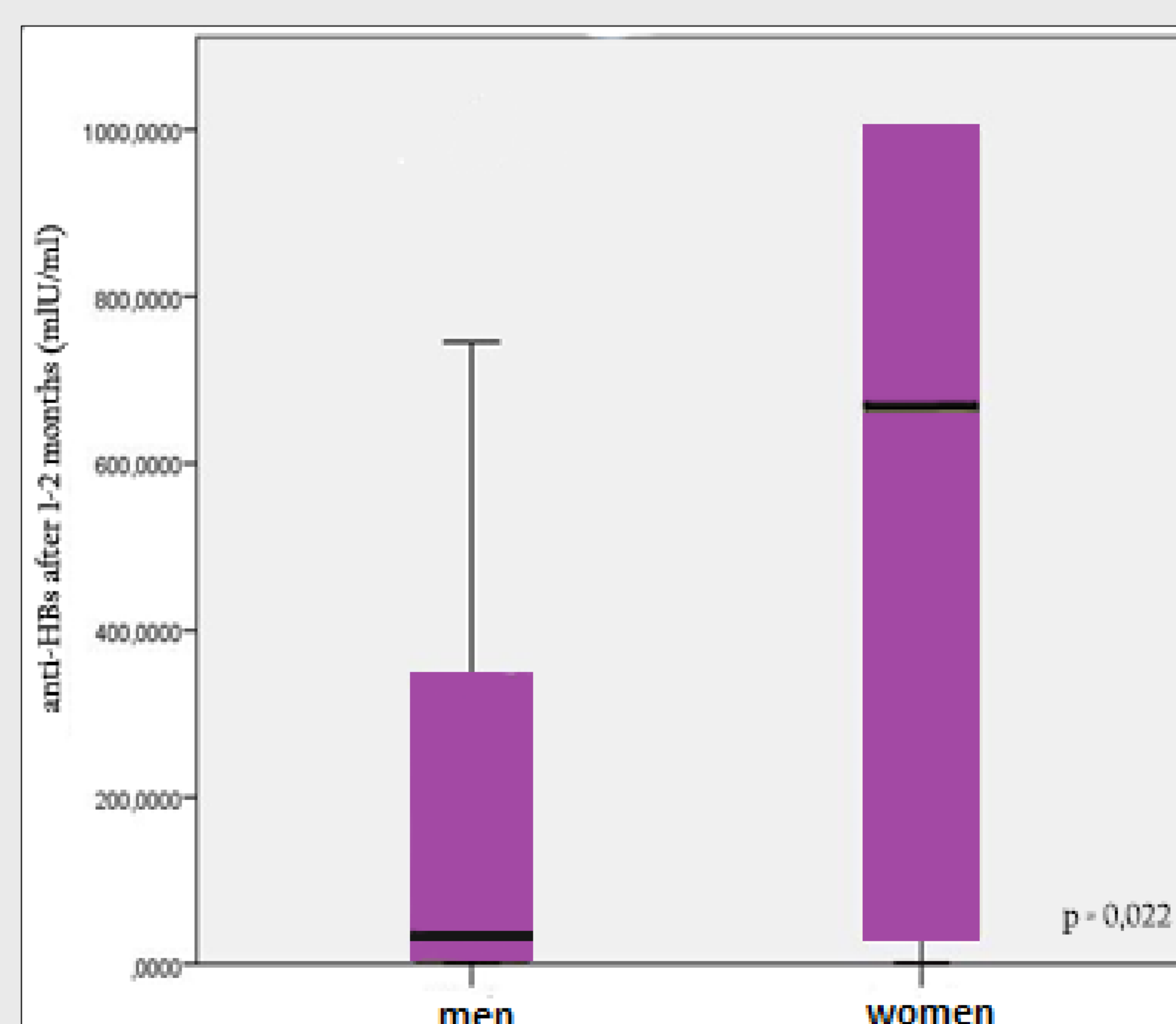
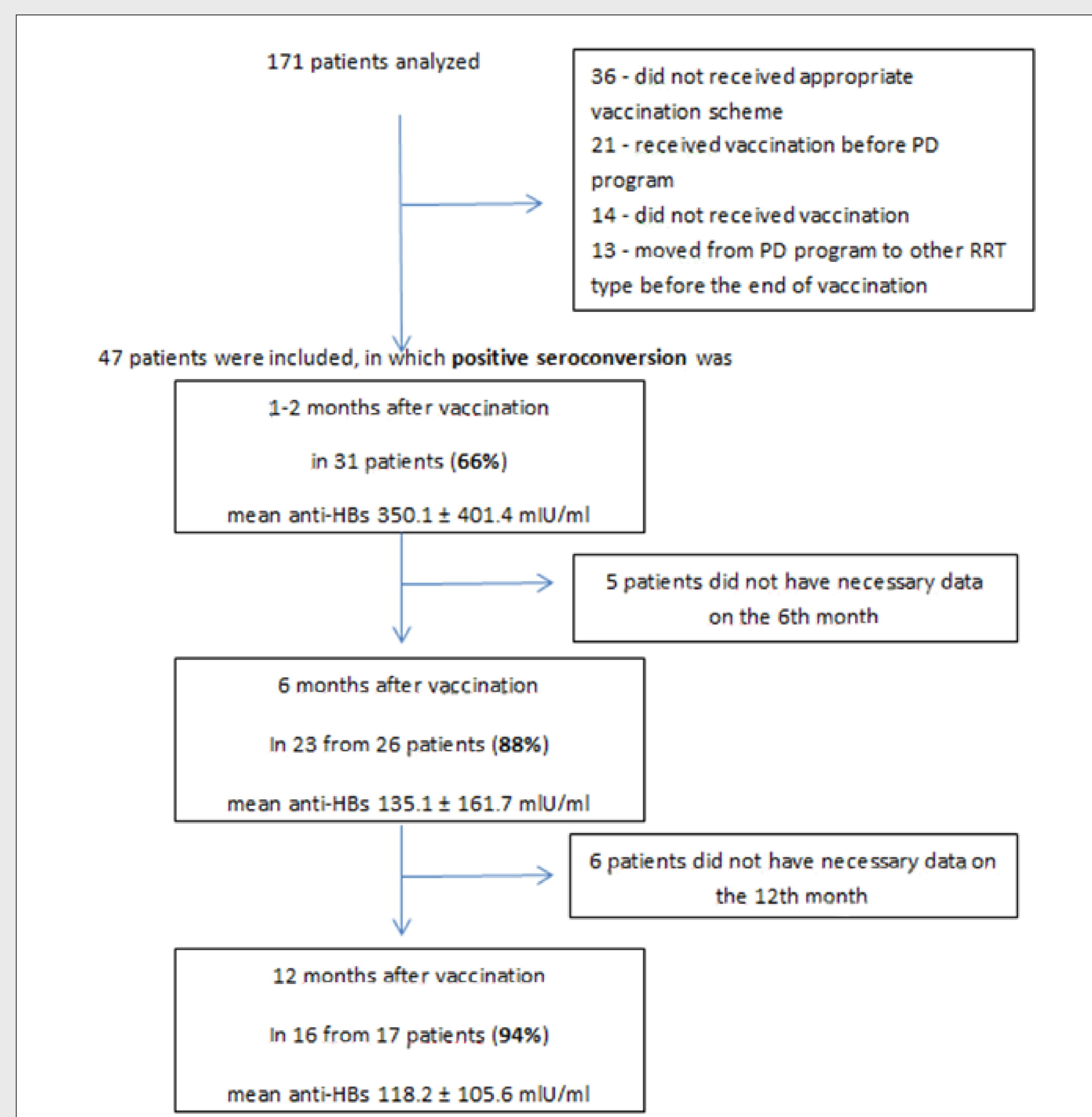
## Materials and methods

Retrospective cohort study of PD patients, who were in PD program for four (4) consecutive years, from 2010 to 2013.

Inclusion criteria were:

- received 4 vaccines: at 0, 1, 2 and 6 months with *Engerix-B* 40 mcg while being in PD program;
- one of the vaccines received after start of PD;
- no HBV vaccination before;
- available data about anti-HBs level after vaccination (1- 2 months, 6 and 12 after vaccine);
- neither previous, nor active hepatitis or HBsAg carrying.

## Results

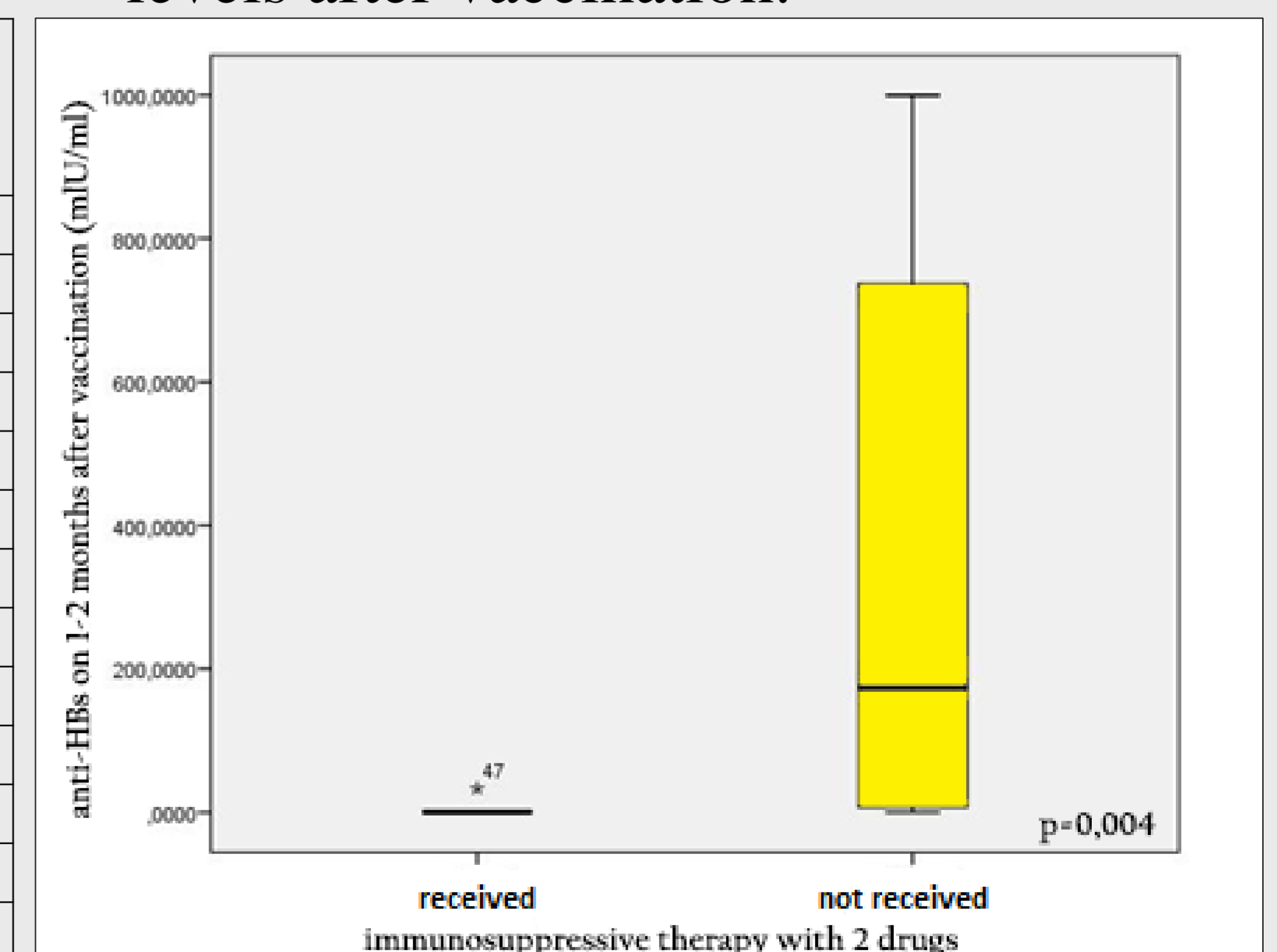


Baseline demographics and laboratory parameters	A correlation coefficient with anti-HBs on the 1st-2nd month after vaccination	P value
Age	-0,10	0,49
Mean GFR	0,07	0,67
BMI	-0,20	0,18
Albumin	0,15	0,34
Triglycerides	-0,21	0,16
Cholesterol	0,06	0,69
Hemoglobin	0,12	0,43
<b>Ferritin</b>	<b>-0,36</b>	<b>0,02</b>
Urea	0,11	0,39
Creatinine	-0,20	0,18
Calcium	0,07	0,64
Phosphorus	0,09	0,57
PTH	0,17	0,26

At least 4 of 31 patients (13%) lost their immunity for hepatitis B with pre-established protective anti-HBs level after one year.

Higher anti-HBs levels were observed in women and in patients, who did not receive additional immunosuppressive therapy during vaccination.

There was also a weak negative correlation between ferritin levels during vaccination and anti-HBs levels after vaccination.



## Conclusions

Initial protective response rates in PD patients are significantly lower than in general population.

Men, patients receiving additional immunosuppressive therapy during vaccination, and possibly patients with higher ferritin levels have lower seroconversion rates.

Since some of the primary responders lose their immune response during half a year, anti-HBs should be first checked after 6 months.