More about Response to Hepatitis B Vaccine in Hemodialysis Patients

G.		Vagelli
G.		Calabrese
A.		Mazzotta
G.		Pratesi
M.		Gonella

Servizio di Nefrologia e Dialisi, Ente Ospedaliero, Casale Monferrato, Italia

Dr. M. Gonella, Servizio di Nefrologia e Dialisi, Ente Ospedaliero, I-15033 Casale Monferrato, (Italia)

Dear Sir,

We read with much interest the paper by Van Geelen et al. [1], who reported a very high conversion rate (92%) in chronically hemodialyzed patients in their unit by using double doses of MSD vaccine. This good result is suggested to be influenced by the strong female predominance (78%) among the studied patients, since previous investigations [2] showed less responsiveness to hepatitis B (HB) vaccine in dialyzed males.

As these results were confirmed in our renal unit, we looked for possible factors which might account for the different responsiveness to HB vaccine. A total of 15 patients (11 males and 4 females) on chronic hemodialysis with no HB markers were given a Pasteur vaccine dose of 5 µg three times at 1 month intervals, with a booster 1 year after.

Three months after the last injection, 5 patients (33%) did not show seroconversion. The mean values of serum creatinine and body weight were observed to be significantly lower ($p < 0.005$ and $p < 0.01$, respectively) in the seroconverted patients than in nonresponders who were all males and significantly younger ($p < 0.02$; table I).

The significantly lower age in non responders may be casual and attributed to the small series, since a previous paper has shown a more active seroconversion in

Table I. Clinical parameters in anti-HBs responding and nonresponding hemodialyzed patients

younger patients [3]. The higher serum creatinine in non responders, due to larger muscle mass, might contribute to the lower seroconversion rate, creatinine being a metabolic precursor of methylguanidine [4, 5] which is reported to inhibit lymphocyte DNA synthesis [6]. Finally, the lower male responsiveness to HB vaccine that we found in agreement with previous paper [2] might be due to yet uncertain sex-related factors affecting immune response, but it may be more simply attributed to the higher mean body weight of such patients.

Therefore, a schedule may be suggested taking also into account vaccine dose/body weight ratio, and this suggestion is consistent with papers which show better results by increasing the amount of vaccine dose [1,3].

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