SEROCOVERSION AND IMMUNE RESPONSE AFTER ANTI-HBV VACCINATION IN PATIENTS ON CHRONIC HEMODIALYSIS
COMPARISON OF TWO VACCINE DOSES

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Objectives:

To evaluate seroconversion and immune response after anti-HBV vaccination by two doses of hepatitis B viral vaccines in patients on maintenance hemodialysis

Methods:

Forty-six patients who never took anti-HBV vaccination and age was 18-70 years old (including 70) and HBsAg, anti-HBs, HBeAg, anti-HBe, anti-Hbc was negative on chronic maintenance hemodialysis were enrolled in the study. The patients were randomized to group A (n =29) or group B (n = 17) who arm received three intramuscular administrations of 20 microgram and 60 microgram recombinant yeast-derived hepatitis B vaccine on 0, 1 and 6 months, respectively. Patients' serum hepatitis B surface antibody levels were followed on 7th and 13th month after first intramuscular vaccination.

	Group A(20μg)	Group B(60μg)	P-value
N	29	17	
Male	15	10	0.641
Female	14	7	
Age	48±12	49±17	0.864
BMI	20.41±3.03	22.77±3.09	0.054
Alb(g/L)	42.7±8.3	42.1±6.3	0.219
Hemodialysis maintanance time(m)	23±22	32±24	0.228
Anti-HBs 7th m seroconversion (%)	62.1(18/29)	88.2(15/17)	0.118
Anti-HBs 7th m (mIU/ml)	54.8±88.15	147.44±108.33	0.003
Anti-HBs 7th m >100mIU/ml (%)	20.7(6/29)	52.9(9/17)	0.024
Anti-HBs 13th m seroconversion (%)	82.8(24/29)	100(17/17)	0.186
Anti-HBs 13th m (mIU/ml)	186.96±114.18	230.6±100.97	0.24
Anti-HBs 13th m >100mIU/ml (%)	44.8(13/29)	82.4(14/17)	0.013

Results:

There were 15 male and 14 female patients that mean age was 47.9±12.3 and 10 male and 7 female that mean age was 48.8±17.0 in group A and group B,respectively. The age, gender, maintenance hemodialysis period, nutritional status, anemia and white blood cells, serum CD3, CD4, CD8 and CD4 / CD8 T lymphocyte, IL10 and IL12 was not significant(P>0.05) comparing the two groups before the first hepatitis B vaccination. The seroconversion rate was 62.1%（18/29) in group A and 88.2%（15/17）in group B（X^2=2.438, P=0.118）. The serum anti-HBs titer was lower in group A than group B. It was 54.8±88.15mIU/ml in group A and 147.44±108.33mIU/ml in groupB（P=0.003）.The seroconversion responses were slower in group A than group B. The seroconversion rate with titer lever more than 100mIU/ml was 20.7%(6/29) in group A and 52.9%(9/17) in group B(P=0.024) before the third deltoid intramuscular injection. By six months after the third anti-HBV vaccination it was that 5 cases(17.2%) didn’t get seroconversion in group A and 0 case didn’t get seroconversion in group B. The seroconversion rate with titer lever more than 100mIU/ml was 44.8%(13/29) in group A and 82.4%(14/17) in group B(P=0.013). There were not any adverse effects in the two groups.

Conclusions:

- The adverse effect was not found in chronic hemodialysis patient who took 60 microgram hepatitis B vaccine.
- The immune response was faster and the seroconversion rate was higher in patients who took 60 microgram hepatitis B vaccination than who took 20microgram hepatitis B vaccination.

References:

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