

## 신장이식 환자에서 A형간염 백신의 효능과 안정성에 관한 연구

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### Efficacy and Safety of Hepatitis A Vaccination in Kidney Transplant Recipients

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**Background:** Symptomatic hepatitis A virus (HAV) infection has been increasing recently, and its morbidity and mortality is growing in Korea. Therefore, HAV vaccination should be considered, especially in immunocompromised patients including kidney transplant patients. Here, we investigated the efficacy and safety of HAV vaccination in kidney transplant recipients.

**Methods:** We evaluated seroprevalence of IgG antibody to HAV in kidney transplant patients in Seoul National University Hospital. Seronegative patients were immunized with two doses of HAV vaccine 6 months apart. Post-vaccination anti-HAV IgG antibodies were investigated after one month of the second vaccine dose, and side effects were monitored at each vaccination.

**Results:** Among a total 416 kidney transplant recipients that were screened, 338 (81.2%) patients showed seropositivity for anti-HAV IgG antibody. However, among patients under forty years old, only 31.8% were seropositive. Fifty-two seronegative recipients (mean age 34.1 years, 71.2% male) had received two doses of vaccine, and only 14 of the 52 patients (26.9%) had seroconversion. Vaccine responders had lower serum creatinine concentration ( $1.19 \pm 0.24$  vs.  $1.45 \pm 0.49$  mg/dL,  $p=0.013$ ), higher plasma hemoglobin level ( $14.4 \pm 1.9$  vs.  $12.8 \pm 1.8$  g/dL,  $p=0.006$ ), and lower use of tacrolimus than cyclosporine (57.1% vs. 84.2%,  $p=0.040$ ) compared with non-responders. Responders had a tendency of lower dose of prednisolone ( $3.5 \pm 1.6$  vs.  $4.3 \pm 1.2$  mg/day,  $p=0.076$ ), and less infection events (14.3 vs. 40.5%,  $p=0.076$ ). However, white blood cell count, lymphocyte count, time post-transplant to vaccination, duration of dialysis, body mass index, and serum concentration of tacrolimus or cyclosporin were not different between the two groups. Injection site pain occurred in 3 patients, and myalgia with mild fever occurred in 4 patients. Overall, vaccine was well tolerated in all patients.

**Conclusion:** HAV IgG screening is necessary for kidney transplant patients, especially young recipients. HAV vaccination was safe in kidney transplant patients, and could be recommended in seronegative patients. However, strategies to improve efficacy of HAV vaccination in kidney transplant recipients should be developed.

**Key Words:** 신장이식, A형간염, 백신

Kidney transplantation, Hepatitis A, Vaccination