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Efficacy of the Trivalent Influenza Vaccination in Thai Patients with Hemodialysis or Kidney Transplant Compared with Healthy Volunteers

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Abstract

Objective: To evaluate the immune response to trivalent influenza vaccination in Thai patients with hemodialysis (HD) or kidney transplant (KT) compared with healthy volunteers.

Material and Method: This was a cross-sectional study in Thai healthy volunteers and patients with HD and KT who received the trivalent influenza vaccine provided by the Ministry of Public Health of Thailand from 1 November 2011 to 31 December 2011. Each subject was injected intramuscularly with one dose (0.5 milliliter) of trivalent influenza vaccine containing viral strains recommended by the WHO for the 2011 influenza season (southern hemisphere). Blood samples before and 6 weeks after the vaccination were measured for immune response using a hemagglutination-inhibition antibody assay.

Results: Subjects consisted of 30 healthy volunteers, 30 patients with HD and 30 patients with KT. Prevalence of prevaccination seroprotective (SP) immunity in each group (healthy volunteers, HD, KT) was as follows: against H1N1 (33.3%: 23.3%: 10.0%), H3N2 (80.0%: 26.7%: 23.3%) and B (60.0%: 20.0%: 3.3%) viral strains, respectively. Those who were seronegative (SN) before testing positive after one dose of this vaccine were as follows: H1N1 (100.0%: 73.9%: 74.1%), H3N2 (66.7%: 86.4%: 34.8%) or B (58.3%: 66.7%: 48.3%) viral strains, respectively. The healthy group showed significantly higher SP immune response for H1N1 than the HD and KT groups ($p = 0.023$). The HD group had significantly higher SP immune response for H3N2 than the KT groups ($p = 0.001$). Immune responses for the B vaccine in all groups were not different. No major adverse event was found in any group.

Conclusion: Immune response for H1N1 vaccine in the HD and KT groups was slightly less than that of the healthy group. Immune response for H3N2 vaccine in the KT groups was less than in the healthy and HD groups. Immune responses for B vaccine in all groups were not different.

Keywords: H1N1 influenza A virus infection, Influenza vaccine

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