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Abstract (oral session)

Comparisons of serologic responses to booster vaccination with 23-valent pneumococcal polysaccharide vaccine versus 7-valent pneumococcal conjugate vaccine in HIV-infected adult patients in the era of combination antiretroviral therapy

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Background: Booster vaccination with pneumococcal polysaccharide vaccine (PPV) has been recommended for HIV-infected patients whose vaccination with PPV occur 5 years or greater. Whether vaccination with 7-valent pneumococcal conjugate vaccine (PCV) may generate better antibody responses than with 23-valent PPV remains controversial in this population. We aimed to compare the serologic responses between vaccination with 23-valent PPV and 7-valent PCV in HIV-infected patients in the era of combination antiretroviral therapy (cART). Methods: From March 2009 to April 2010, HIV-infected adult patients who had received 23-valent PPV vaccination 5 years or more earlier were sequentially enrolled to receive 1 dose of 23-valent PPV, or 2 doses or 1 dose of 7-vaent PCV as booster vaccination. Anti-capsular antibody responses against 4 serotypes were examined (6B, 14, 19F, and 23F) at baseline and every 3 months following vaccination with the use of ELISA after absorption with 10 μ g/ml cell-wall polysaccharide and 30 μ g/ml 22F polysaccharide. Significant antibody responses were defined as 2-fold or greater increase of antibody levels 12 months following vaccination compared to baseline. Results: During the study period, 128 patients received booster vaccination with 1 dose of PPV, and 45 and 47 received 2 doses and 1 dose of PCV, respectively. Demographics, chronic infection with hepatitis B or C virus, CD4 count, and plasma viral load were comparable between patients receiving PPV and those receiving PCV. Compared with patients receiving PCV, more patients receiving PPV were on cART at booster vaccination. Serologic responses to at least 1, 2, or 3 serotypes examined 12 months following vaccination were similar between patients receiving 2 doses and those receiving 1 dose of PCV. Compared with patients receiving PPV, patients receiving PCV had a significantly higher serologic responses to at least 1, 2 , or 3 serotypes. In multivariate analysis, booster vaccination with PCV and chronic HCV infection were significantly associated with serologic responses, with adjusted odds ratio of 35.44 (95% CI, 7.31-171.86) and 5.45 (95% CI, 1.07-27.72), respectively. Conclusions: Booster vaccination with 7-valent PCV generated a significantly better serologic responses than 23-valent PPV in HIV-infected patients who had received 23-valent PPV 5 years or more earlier in the cART era.