Effect of Influenza Immunization With Inactivated Trivalent Polymer-subunit Vaccine in Lung Transplant Recipients

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Introduction: Lung transplant recipients are at increased risk of a severe course of respiratory infections due to the disruption of natural defense mechanisms and the direct impact of pathogens on allograft.Objective: To evaluate the safety and immunogenicity of the influenza inactivated polymer-subunit vaccine in lung transplant recipients.Methods: 16 lung transplant recipients (8 men and 8 women) aged 25-46 years (34 ±0,5) were vaccinated with inactivated trivalent polymer-subunit vaccine. The time after lung transplantation ranged from 4 months to 4,5 years (2,2 ± 1,2 yr). Patients received immunosuppressive therapy, that included calcineurin inhibitors, antimetabolites (mycophenolate mofetil), and systemic glucocorticosteroids.For vaccination, an inactivated polymer-subunit vaccine "Grippol@plus" (Petrovax Pharm LLC) was used, which contains in one dose (0.5 ml) hemagglutinins of 3 strains of the influenza virus in amount of 5 μg of each hemagglutinin and 500 μg of the immunoadjuvant azoximer bromide. All patients were vaccinated against influenza in the previous season.Antibodies to influenza and viruses were detected in the haemagglutination inhibition assay. Blood samples were obtained before, 1 month and 12 months after influenza vaccination.Results. General and local side effects were not observed in the post-vaccination period. During the year of observation there were no cases of influenza and episodes of lung transplant rejection. The seroprotection levels (reference level ≥ 70%) for A/H1N1, A/H3N2 and B/Brisbane influenza strains before vaccination were 87.5%, 68.75% and 37.5%, respectively. One and 12 months after vaccination the seroprotection level for the A/H1N1 strain remained high (100% and 92.3%, respectively). For the A/H3N2 and B/Brisbane strains was observed an increase in the seroprotection levels up to 93.75% and 81.3%, respectively, 1 month after vaccination and up to 84.6% and 76.9% respectively, 12 months after vaccination. Conclusion: Influenza vaccination of lung transplant recipients with inactivated polymer-subunit vaccine with reduced amount of antigens is safe and induces high levels of seroprotection.

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