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A new hypothesis in aging vaccinology-Rejuvenation of immune cells in the vaccination: An interesting experience of influenza vaccine in aged mice

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Influenza remains a serious cause of death among aged people because of their aged physiologic. Immune cells functions decline in elderly and regardless of mutation in the genome of virus; this is the main causative of inefficacy of influenza vaccine in aged people. Herein, we hypothesized that if a mechanism established at the immune-switching time and rejuvenate the responding cells of aged people, this may result to increase of vaccine efficacy in aged people. Hemagglutinin of H1N1 virus formulated in alum and tocopherol and then aged (16-20-month-old) and young (6-8-week-old) mice immunized subcutaneously two times with two week intervals with 5 µg of different formulations of vaccine. Two weeks after final boosting IFN-γ, IL-4 cytokines assessed with ELISA. Humoral immune response of experimental groups assessed. In addition, vaccine efficacy is determined by experimental challenge of mice with H1N1 virus strain (Mouse adapted virus). Results showed that our vaccine formulation improved cytokines response in the experimental mice but increase of cytokines responses were mainly seen in aged group but less in young group. In addition, protection versus experimental challenge increased in aged mice. It seems that in our formulation condition aged mice give better immune responses versus Influenza vaccine and this strategy may targeted on cell physiologic.

Biography

Yasaman Vahdani is a MD Pharmacist graduated from Islamic Azad University of Tehran.