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S13 – Efficacy of Combined Influenza and 23-valent Pneumococcal Polysaccharide Vaccines in Patients with Chronic Illness

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Introduction: Pneumococcal and influenza infections can cause serious morbidity and mortality in the elderly population. Dual vaccination with the 23-valent pneumococcal polysaccharide vaccine (PPV) and trivalent influenza vaccine (TIV) has been shown to reduce hospitalization and deaths. Nevertheless, the long-term effect of dual vaccinations on these subjects and its effect in the 50-64 years age group remained unknown.

We therefore performed 2 prospective studies:

1. Follow-up study on the efficacy of dual PPV and TIV in the elderly subjects with chronic illness.
2. Randomized study on the efficacy of dual PPV and TIV in the 50-64 years with chronic illness.

Methods: Both studies were conducted in the Queen Mary Hospital special outpatient clinic. For the first study, we followed-up the 36,636 elderly subjects aged ≥ 65 years previously recruited. For the second study, we recruited subjects aged 50-64 years with chronic illness. Recruited subjects were randomly assigned into 4 groups. Group 1 received both TIV and the PPV or one of the three controls: Group 2 received TIV only, Group 3 received PPV only and Group 4 received none. Demographics data, subsequent hospitalization and outcome of the recruited subjects were retrieved from the computer medical system.

Results:

Study 1: We follow-up the 36,636 elderly subjects for 7 years. Of these, 7,292 (19.9%) received both the PPV and TIV, 2,076 (5.7%) received TIV alone, 1,875 (5.1%) received PPV alone, and 25,393 (69.3%) were unvaccinated. By the end of the study, the median age of the recruited subjects was 75 (IQR: 70-80) years and 45.4% were male. Significantly fewer dual-vaccinees died (HR, 0.87; 95% CI, 0.83-0.92; $p < 0.001$); fewer cardiovascular events (HR, 0.74; 95% CI, 0.7-0.79; $p < 0.001$); fewer pneumonia (HR, 0.74; 95% CI, 0.69-0.79) and fewer ICU admission (HR, 0.56; 95% CI, 0.46-0.68), compared with the unvaccinated.

Study 2: A total of one thousand 50-64 years old subjects were recruited from April 2010 to March 2013, and 250 subjects were randomized to each group. The median age of all group were 57 and 485 (48.5%) were male. Significantly fewer subjects who received the dual vaccination were hospitalized ($p < 0.001$) for respiratory, cardiovascular or cerebrovascular diseases.

Conclusion: Dual PPV and TIV vaccination protected elderly subjects and the younger subjects with chronic illness against hospitalization, and reduced deaths in the elderly. Both vaccines should be considered as part of the vaccination program for the elderly and patients with chronic illness by the health authority.

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