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A randomised controlled trial to comparing immunogenicity between intramuscular and intradermal trivalent influenza vaccination in nursing home older adults
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Introduction
Nursing home older adults are vulnerable to complication of influenza infection and influenza vaccination is one of the major methods to decrease mortality and morbidity of this population. However, immunosenescence in older adults contributes to unsatisfactory immunogenicity towards influenza vaccine. Intradermal (ID) administration of influenza vaccine has been suggested to improve immunogenicity but there is no study regarding the immunogenicity of ID influenza vaccination in nursing home older adults.

Objectives
To compare the immunogenicity and safety between ID and IM influenza vaccination.

Methodology
A single-centre, randomised, controlled, open-label, parallel group trial from October-2013 to April-2014 in nine nursing homes. Day-21 and day-180 immunogenicity of ID compared to IM vaccination were analysed.

Result
100 nursing home older adults (mean age: 82.9±7.4 years; male 36%) were randomised. Baseline characteristics were similar between two groups. At day 21, non-inferiority in immunogenicity of the ID vaccination was demonstrated. The seroconversion rate of the H1N1 strain was significantly higher in the ID group. At day 180, immunogenicity of both groups fell but the GMT of all strains in ID group was higher and the difference was significant for H3N2 strain. The seroconversion rate and GMT fold increase of H3N2 strain was significantly higher in the ID group. ID vaccination of influenza vaccine is non-inferior to IM vaccination in immunogenicity in
nursing home older adults. Furthermore, ID vaccination is superior in some components of the immunogenicity assessment. Further study on clinical effectiveness of ID vaccination is warranted as it may help reducing mortality and morbidity of nursing home older adults due to influenza infection.