2743. Safety of Recombinant Influenza Vaccine Compared with Inactivated Influenza Vaccine in Adults

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Background: In 2013, a recombinant trivalent influenza vaccine (RIV, Flublok®, Sanofi Pasteur) was licensed for use against influenza virus subtypes A and B contained in the vaccine for persons 18–49 years of age and approved for all adults ≥18 years of age in 2014. The study aim was to evaluate the safety of RIV compared with trivalent standard-dose, inactivated influenza vaccine (IIV3) in Kaiser Permanente Northern California (KPNC).

Methods: This was an observational, retrospective cohort study including all persons ≥18 years vaccinated in KPNC facilities with RIV or IIV3 during the 2015–2016 influenza season as part of routine clinical care. We compared the rates of pre-specified diagnoses of interest (Guillain-Barré Syndrome, pericarditis, pleural effusion, narcolepsy/cataplexy, asthma, acute hypersensitivity reactions and fever) using International Classification of Diseases codes during post-vaccination risk intervals 0–2, 0–13, 0–41, and 0–180 days, as well as all-cause hospitalization rates 0–180 days following vaccination. Comparing cohorts, we estimated odds ratios (ORs) and 95% confidence intervals (CIs) using logistic regression analyses adjusted for age, sex, race/ethnicity, month of vaccination, and concomitant receipt of other vaccinations.

Results: During the study period, 21,976 persons received RIV and 283,683 received IIV3. Comparing RIV with IIV3, there were no statistically significantly elevated outcomes. RIV vaccination was associated with significantly decreased fever in the 0–41 day risk interval (OR 0.38, 95% CI 0.14–0.86) and all-cause hospitalization (OR 0.66, 95% CI 0.61–0.73) in the 0–180 day risk interval. Further analyses found that the lower rates of hospitalization in RIV recipients was mostly, though not fully, related to pregnancy-related hospital events in the IIV3 cohort and to the presence of additional unmeasured confounding. There were no serious adverse events or deaths related to RIV or IIV3.

Conclusion: This study did not identify any safety concerns regarding the use of RIV in adults. Understanding the observed reduction in all-cause hospitalization will need additional studies.

Disclosures. **All authors:** No reported disclosures.

2744. A Phase I Randomized, Observer-Blind, Controlled, Dose Escalation Trial of the Safety and Tolerability of a Single Intramuscular Dose of a PAL Adjuvant (Laboratory Code, FB-631) Co-administered with Seasonal TIV (2013–2014) to Healthy Adults ≥18–50 Years of Age

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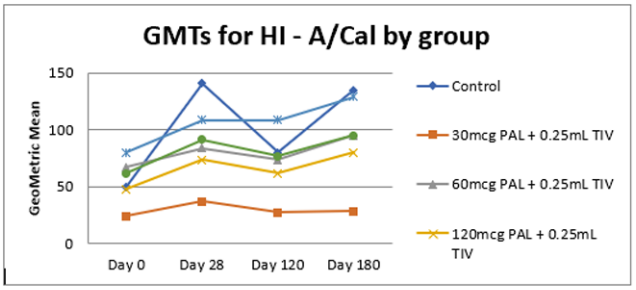
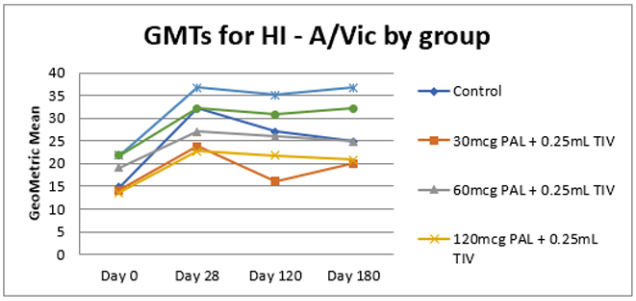
Background: Inactivated influenza vaccines (IV) efficacy is variable and sometimes poor. In this phase 1 trial the safety and immunogenicity of a novel nanoparticle adjuvant (Papaya Mosaic Virus (PapMV or PAL) at different dose levels combined with inactivated trivalent IV (TIV; FLUVIRAL® 2013–2014, GSK, Kirkland PQ) was assessed. Nonpathogenic in mammals, PAL is recognized as a pathogen-associated molecular pattern (PAMP) which stimulates innate, cell-mediated immunity (CMI) and adaptive immunity in naïve mice through activation of toll like receptor 7 and 8.

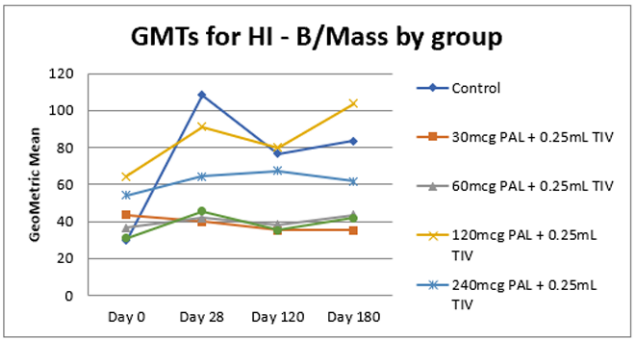
Methods: Healthy persons 18–50 years of age were randomized to one of 6 study groups: 30 µg, 60 µg, 120 µg or 240 µg of PAL with 0.25 mL TIV, 240 µg of PAL with 0.125 mL TIV, or control (0.5 mL TIV). Solicited local and general adverse events (AE) were collected Day (D)0 to 6, unsolicited AE to D28, and serious AE to D1095. Hemagglutination-inhibition assays (HI), antibody to Influenza A virus nucleoprotein (NP), and peripheral blood mononuclear cells (PBMC) for measurement of interferon-gamma (IFNg) ELISPOT (response to PepMix influenza A H2N2 Ann Arbour NP, MP1, and an influenza peptide pool), granzyme B, and IFNg:IL:10 ratio were collected on D0, 7, 28, 120, and 180.

Results: The most common solicited AEs were transient mild-to-moderate local pain (62.5%–87.5% of participants/group), drowsiness (≤37.5% of participants/group) and generalized muscle aches (12.5–50% of participants/group). There was one unrelated SAE. All participants had HI and anti-NP titers at baseline. HI GMTs increased at D28 post vaccine in most groups (Figure 1) and waned over time. HI fold Ab (Far) responses to TIV strains were poor in all groups (≤37.5% of participants/group had 4-Far to any strain). CMI results were consistent with humoral responses.

Conclusion: The PAL adjuvant in doses of 30 to 240µg combined with reduced TIV dosages was safe with no signals up to 3 years after vaccine. Reduced doses of TIV co-presented with 240 µg PAL had similar HI GMTs as TIV. The CMI results suggest that the assessment of PAL efficacy on TIV immunization would have to be conducted in an influenza naïve population.







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2745. Efficacy and Effectiveness of High-Dose Influenza Vaccine for Older Adults by Circulating Strain and Antigenic Match: A Systematic Review and Meta-Analysis

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Background: Influenza vaccine efficacy/effectiveness can vary from season to season due in part to the dominant circulating strains and antigenic matching. This study reviews the relative vaccine efficacy/effectiveness (rVE) of high-dose inactivated trivalent influenza vaccine (HD-IIV3) compared with standard-dose influenza vaccines (SD-IIV3) in adults ≥65 years against influenza-associated outcomes across all influenza seasons, during seasons where A/H3N2 or A/H1N1 strains predominantly circulated, and where there was an antigenic match or mismatch of the vaccine and circulating strains.

Methods: A systematic review was conducted for studies assessing the rVE of HD-IIV3 against probable/laboratory-confirmed influenza-like illness (ILI), hospital admissions, and death in adults ≥65 years. Results from individual seasons were extracted from the identified studies, and surveillance data from each season were used to determine the dominant circulating strains and antigenic match. Results were then stratified based on clinical outcomes and seasonal characteristics and meta-analyzed to estimate pooled rVEs of HD-IIV3.

Results: 11 studies were meta-analyzed after screening 1,018 studies, providing data on 9 consecutive influenza seasons and over 12 million individuals receiving HD-IIV3.