Session: P-60. New Vaccines

Background. MenACYW-TT (MenQuadrix, Sanofi) is a quadrivalent (serogroups A, C, W, Y) meningococcal polysaccharide vaccine that has recently been approved for use in persons aged ≥2 years in the US and persons aged ≥15 years in Europe and certain other countries; trials in infants as young as 6 weeks are ongoing. This study evaluated seroresponse after a MenACYW-TT booster given to adults who received either MenACYW-TT or a meningococcal polysaccharide vaccine (MPSV4) on MenACYW-TT three years earlier at age ≥56 years. Immune persistence up to 7 years after primary vaccination was also evaluated.

Methods. This was a Phase 3 randomized, open-label study (NCT04142242) of adults aged ≥59 years who participated in previous studies of MenACYW-TT vs MPSV4 (NCT01732627 and NCT02842866). The study was conducted in the US and Puerto Rico. Immune response and persistence were assessed with a serum bactericidal assay using human complement (hSBA). Sufficiency of the vaccine seroresponse was considered demonstrated if the lower limit of the 1.8 sided 95% CI is greater than 0%. Safety data were collected up to 30 days after booster vaccination.

Results. A total of 471 persons were enrolled. Sufficiency of a MenACYW-TT booster was demonstrated for MPSV4- and for MenACYW-TT primed subjects. hSBA seroresponse rates were higher among MenACYW-TT- vs MPSV4-primed subjects (79.3%–93.1% vs 49.2%–60.8%, respectively). Three to 7 years after primary vaccination, hSBA geometric mean titers (GMTs) and seroprotection rates (SPRs) declined in both MenACYW-TT- and MPSV4-primed subjects, with hSBA GMTs and SPRs for serogroups C, W, and Y generally remaining higher for MenACYW-TT- vs MPSV4-primed subjects; those for serogroup A were similar regardless of priming vaccine. Rates of adverse events following a MenACYW-TT booster were similar between MenACYW-TT- and MPSV4-primed subjects. No safety concerns were identified.

Conclusion. A MenACYW-TT booster was well tolerated and immunogenic when administered to either MPSV4- or MenACYW-TT-primed adults aged ≥59 years. Up to 7 years after primary vaccination, immune persistence for serogroups C, W, and Y tended to be greater for MenACYW-TT- vs MPSV4-primed subjects; those for serogroup A were similar regardless of priming vaccine.

Disclosures. Barbara A. Robertson, MPH, MPH, EACP, Sanofi Pasteur (Employee, Other Financial or Material Support, Stockholder) Alexandre Selmani, PhD, Sanofi Pasteur (Employee) Katherine Galarza, MD, Sanofi Pasteur (Employee) Philipp Oster, MD, Sanofi Pasteur (Employee, Stockholder) 

1047. Development of a Next Generation 30° Valient Pneumococcal Conjugate Vaccine (VAX-XP) Using Site-Specific Carrier Protein Conjugation Chris Behrens, PhD; Jeff Fairman, PhD; Pareesh Agarwal, PhD; Shylaja Arulkumar, MS; Sandrine Barbanel, MS; (Employee) Aym Berge, PhD; John Burky, BS; Peter Davey, MS; Chris Grainger, PhD; Sherry Guo, PhD; Sam Iki, MS; Viorel Marcu, PhD; Olivier Marcq, MD, PhD, Vaccinex, Inc. (Employee) Thi-San Migne, PhD, Vaccinex, Inc. (Employee) Lucy Pili, MS, Vaccinex, Inc. (Employee) Mohammed Sardar, n/a, Vaccinex, Inc. (Employee) Paul Sauer, MBA, Vaccinex, Inc. (Employee) James Wassil, MB, Vaccinex, Inc. (Employee)

Background. Preventing congenital cytomegalovirus infection (CMVI) is an important unmet need. Natural maternal immunity to CMV acquired prior to pregnancy appears to reduce fetal transmission. In a Phase 1 trial, V160, a replication-defective CMV vaccine expressing the pentameric complex, induced humoral and cell-mediated immune (CMI) responses comparable to natural immunity.

Methods. Healthy, CMV-seronegative women aged 16–35 years were randomized 1:1:1 to receive double-blind V160 in a 3- or 2-dose regimen or placebo. Primary and secondary endpoints were efficacy in reducing the incidence of CMVI with 3-dose or 2-dose regimens of V160 vs placebo, respectively, using a fixed-event design. Monthly urine and saliva samples were collected to identify CMVI by polymerase chain reaction (PCR) with a single positive sample considered evidence of infection. Immunoglobulin G (IgG) and immunoglobulin M (IgM) binding to glycoprotein B (gB) and CMV-specific neutralizing antibody (NAB) were measured in all participants, and CMI responses were measured in a subset. Injection-site and systemic adverse events (AEs) were collected for 5 days and 14 days, respectively, after each vaccination and serious AEs were collected for the trial duration.

Results. 2200 women from 7 countries were enrolled (of 7458 screened). Over 80% of participants received all doses, and compliance with saliva and urine samples was >95%. Vaccine efficacy (VE) of 42.4% (95% CI 13.5, 71.1%) was demonstrated in the 3-dose group vs placebo. For the 2-dose group, VE was 32.0% (95% CI 13.5, 45.0%). Both the quantity and duration of CMV shedding in urine and saliva among cases of CMVI decreased in the 3-dose, but not the 2-dose group vs placebo. Both V160 regimens elicited humoral and CMI responses detected by CMV-specific NAb, gB IgG, and gM, which peaked at Month 7 and continued to be detectable at Month 24. Mild to moderate AEs were more frequently reported in V160 vs placebo recipients, but no vaccine-related serious AEs or deaths were reported.

Conclusion. V160 was well tolerated and immunogenic, but neither the 3-dose nor 2-dose regimen demonstrated significant efficacy against CMVI as defined in this trial. The quantity and duration of CMV shedding was reduced in the 3-dose group, suggesting V160 may improve immune control of viral replication after CMVI.

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