of age (VE 61%, 95% CI 14, 82). VE was 26% (95% CI –58, 65%) against serotype 3 and 67% (95% CI 11, 88%) against other PCV13 types (+6%). PCV13 was not effective against nonvaccine types.

**Conclusion.** PCV13 was effective in preventing IPD caused by PCV13 types when excluding type 3: no effectiveness was demonstrated against serotype 3.

**Disclosures.** W. Schafran, Merck: Member, Data Safety Monitoring Board, Consulting fee. Pfizer: Member, Data Safety Monitoring Board, Consulting fee. Dynavax: Consultant, Consulting fee. Seqirus: Consultant, Consulting fee. SutroVax: Consultant, Consulting fee. Shionogi: Consultant, Consulting fee.

---

152. **Protective Antibody Levels 7.5 Years After Primary Vaccination in Adolescents With a 4-Component, Meningococcal Serogroup B Vaccine (4CMenB) and Response to a Booster Dose in Adolescents and Young Adults: Phase IIIb Clinical Findings**

Terry Nolan, MBBS PhD1; Miguel O’Ryan, MD2; Maria Elena Santolaya, MD3; Fernando Trudano, DPhil3; Catalina Hernandez4; Herve Marache5; TM MBBSPHD5; Peter Richmond, MBBS FRACP1; Sam Henein, MD6; Paul Rhead, MD, MCPP7; Ken Heaton, MD7; Kirsten Perrett, MBBS FRACP PhD13; Hartley Garfield, MD13; Anil Gupta, MD MCPP CFPC13; Murudo Fergusson, MbChB, CFPC(EM) FCfp Dip Sport Med(Can)13; Diego D’Agostino, MSc13 and Daniela Tonceato, MD14.

1University of Melbourne and Murdoch Children’s Research Institute, Melbourne, Victoria, Australia, 2Microbiology and Immunology Program/Institute of Biomedical Sciences, University Of Chile, Santiago, Chile, 3Hospital Dr Luis Calvo Mackenna, Faculty of Medicine, Universidad de Chile, Santiago, Chile, 4AusTrais Pty Ltd. and University of Queensland, Brisbane, Australia, 5University of Adelaide and Women’s and Children’s Hospital, Adelaide, South Australia, Australia, 6University of Western Australian School of Paediatrics and Child Health and Vaccine Trials Group, Telethon Kids Institute, Princess Margaret Hospital for Children, Perth, WA, 7SKDS Research Institute, Toronto, Canada, 8Medicor Research Inc., Sudbury, Ontario, Canada, 9Devonshire Clinical Research Inc., Woodstock, Ontario, Canada, 10Murdock Children’s Research Institute, University of Melbourne and Royal Children’s Hospital, Melbourne, Australia, 11The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada, 12Colchester Research Group, Truro, Nova Scotia, Canada, 13GSK, Amsterdam, Netherlands, 14GSK, Siena, Italy

**Session:** 44. Adult and Adolescent Vaccines

**Thursday, October 4, 2018: 10:30 AM**

**Background.** 4CMenB has been shown to be immunogenic with an acceptable safety profile in infants and young adolescents. However, no data on long-term persistence of antibodies, immunity to meningococcal disease, or effectiveness in young adults are available. The objective was to assess antibody persistence, booster response, and safety of 4CMenB in adolescents and young adults up to 7.5 years following the primary vaccination in adolescence.

**Methods.** This phase 3b, open-label, extension study (NCT02446743) assessed the antibody persistence and booster response at 4 years (Canada and Australia, NCT01423084) or 7.5 years (Chile, NCT00661713) after primary vaccination with 4CMenB (following 0 + 1, 0 + 2, or 0 + 6-month schedules), compared with vaccine-naïve (VN), healthy controls. Chilean follow-on (FO) and VN participants aged 18–24 years received either a booster dose of 4CMenB 7.5 years post-primary series (Group FO, N = 24) or no additional dose (Group VN, N = 25). Immunogenicity was measured using human serum bactericidal antibody assay (hSBA) against antigen-specific strains. Immune response was evaluated 1 month post-booster and 1 month post-first dose (Group VN). Neutralizing antibody levels were measured at 3, 6, and 12 years post-booster. The reactivity of 4CMenB was consistent with previous observations in this age group; no safety concerns were identified during the study.

**Results.** Antibody levels waned at 7.5 years postprimary vaccination in Group FO, but were higher than in Group VN at baseline, for all antigens except NHBA (Table). At 1 month post-booster/post-first dose, 93–100% (Group FO) and 62–93% (Group VN) were higher than in Group VN at baseline, for all antigens except NHBA (Table). At 1 month post-booster/post-first dose, 93–100% (Group FO) and 62–93% (Group VN) were higher than in Group VN at baseline, for all antigens except NHBA (Table). At 1 month post-booster/post-first dose, 93–100% (Group FO) and 62–93% (Group VN) were higher than in Group VN at baseline, for all antigens except NHBA (Table).

**Conclusions.** Antibody levels in adolescents and young adults declined at 7.5 years after a 2-dose primary series of 4CMenB, but were higher than baseline levels in VN controls. An additional dose of 4CMenB elicited strong anamnestic responses—substantially higher than 1 dose in VN controls.

**Funding:** GlaxoSmithKline Biologicals SA.

---

153. **The Effect of Timing of Tetanus–Diphtheria and Pertussis Vaccine Administration in Pregnancy On The Avidity of Pertussis Antibodies**

Baha Abu Raya, MD2; Michelle Giles, MD2; Tobias Kollmann, MD, PhD2; and Manish Sadarangani, BM, BCH, DPHil1; Vaccine Evaluation Center, BC Children’s Hospital, University of British Columbia, Vancouver, British Columbia, Canada; 3Department of Obstetrics and Gynaecology, Monash University, Melbourne, Australia and 4Vaccine Evaluation Center, BC Children’s Hospital, University of British Columbia, Vancouver, British Columbia, Canada

**Session:** 44. Adult and Adolescent Vaccines

**Thursday, October 4, 2018: 10:30 AM**

**Background.** Tetanus–diphtheria–pertussis (Tdap) vaccine in pregnancy is currently recommended in many countries. The optimal timing of pertussis immunization in pregnancy is not well established, leading to different recommendations. We aimed to determine the effect of timing of vaccination with Tdap in pregnancy on the umbilical cord avidity of antipertussis toxin (PT) immunoglobulin G (IgG).

**Methods.** Avidity of anti-PT IgG was assessed using ammonium thiocyanate (NH4SCN) concentrations (0.25, 0.5, and 3 M) and NH4SCN concentrations (0.25, 0.5, and 3 M) to measure high avidity antibodies. Anti-PT IgG levels achieved at 28–32 weeks gestation and low (13–26 weeks gestation) that had high (>0.0354) or low (<0.0354) correlation assessed the relationship between the timing of vaccination and anti-PT IgG levels.

**Results.** Newborns of women vaccinated with Tdap in early third trimester (n = 43) had higher anti-PT IgG levels at 1 M and 2 M NH4SCN concentrations compared with newborns of women vaccinated in late third trimester (n = 47). 2.4 international units (IU)/mL vs. 1.9 IU/mL (P = 0.0073) and 2.3 IU/mL vs. 1.7 IU/mL (P = 0.0354), respectively, after adjustment for gestational age at birth. There was a negative association between later timing of vaccination in third trimester and anti-PT IgG levels achieved at 1 M, 1.5 M, 1.5 M, and 2 M NH4SCN (all P ≥ 0.02). There was a positive association between increasing time between vaccination and delivery and anti-PT IgG levels achieved at 0.5 M, 1 M, 1.5 M, and 2 M NH4SCN (all P ≤ 0.02).

**Conclusion.** Vaccination against pertussis during early third trimester results in higher levels of high avidity antibodies compared with vaccination in late third trimester. High avidity antibodies may confer greater protection to the neonate supporting recommendations for vaccination at 28–32 WG vs. 33–36 WG.

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

---

154. **Diagnosis and Genotyping of Coxiella burnetii Causing Endocarditis in a Patient With Prosthetic Pulmonary Valve Replacement (PVR) Using Next-Generation Sequencing (NGS) of Plasma**

Maiko Kondo, MD,1 Sudeb Dalai, MD PhD2; Lars Westblad, Ph.D3; Shivkumar Venkatsubramaniamy, Ph.D4; Nell Eisenberg, MD5 and Kristen M. Marks, MD5; 1New York-Presbyterian Wellen Cornell Medical Center, New York, New York, 2Karius, Inc., Redwood City, California, 3New York-Presbyterian Hospital, 4Weill Cornell Medical Center, New York, New York, 5Karius, Inc., Redwood Shores, California

**Session:** 45. Cool Findings in Bacteremia and Endocarditis

**Thursday, October 4, 2018: 10:30 AM**

**Background.** Identification of Coxiella burnetii, the etiologic agent of Q Fever, in culture-negative endocarditis (CNE) remains challenging, and strain-level information is typically unavailable through conventional testing. We used a novel next-generation sequencing (NGS) assay on plasma cell-free DNA to facilitate rapid diagnosis and genotyping in a patient with C. burnetii CNE.

**Methods.** NGS was performed on plasma by Karius, Inc. (Redwood City, California). Human reads were removed and remaining sequences were aligned to a curated database of over 1,000 pathogens. Organisms present above a predefined significance threshold were reported. For C. burnetii strain-typing, alignments to different C. burnetii strains in the pathogen database were compared by BLAST bit-score to determine the most closely related strain to the infecting organism. C. burnetii genotype group was also determined by in silico analysis of polymorphic ORF deletion markers known to distinguish groups I–VI.

**Results.** Twenty-nine-year-old male with history of Tetalogy of Fallot, multi-stage valve replacement (PVR), and 16 months of intermittent fever and night sweats were admitted. Relevant history included travel in South and South East Asia, the use of a LivaNova 3T Heater-Cooler device during surgery (i.e., as risk for Mycobacterium chimaera), and drinking unpasteurized milk. Cardiac CT showed 2 pulmonary opacities concerning for septic emboli and echocardiography showed echodensity on pulmonic valve. Blood cultures were negative. NGS detected C. burnetii