2272. High Interest in Doxycycline for Sexually Transmitted Infection Post-Exposure Prophylaxis (Doxy-PEP) in a Multi-city Survey of Men Having Sex With Men (MSM) Using a Social-Networking App

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Background. Sexually transmitted infections (STI) in people living with HIV (PLWH) and HIV-uninfected men who have sex with men (MSM) are increasing. Doxycycline post-exposure prophylaxis (doxy-PEP) showed partial efficacy against STI acquisition in a small population of HIV-uninfected MSM using pre-exposure prophylaxis (PrEP). Acceptability in a larger, diverse population of MSM is unknown.

Methods. We conducted a survey of doxycycline for STI PEP among users of a gay social networking app in 6 US cities: Atlanta, Birmingham, Chicago, New York City, San Francisco, and Seattle. In adjusted analyses using logistic regression, we examined factors associated with bacterial STI in the last year and willingness to use doxy-PEP. Predictors included: demographics, city, risk behaviors, and bacterial STI.

Results. Overall, 1301 individuals, 80% HIV-uninfected, 16% PLWH, and 4% status unknown responded to the survey. The median age was 33 and the sample was racially/ethnically diverse: 7% Asian, 21% Black, 24% Latinx, and 44% White. Most (80%), reported condomless sex in the last 6 months; 39% reported an STI in the last year. Of the HIV-uninfected, 44% were on PrEP. In adjusted analysis, age per ten years was inversely associated with an STI in the last year (AOR 0.8; 95% CI: 0.7–0.9 and AOR 0.2; 0.0–0.8 respectively), while number of partners in the last 6 months and condomless anal sex were associated with STI (AOR 1.1 per 5 partners; 1.0–1.1 and AOR 3.8; 2.5–5.8 respectively). There was no difference by race/ethnicity, or when comparing PrEP users to PLWH, however not using PrEP was inversely associated with STI (AOR 0.2; 0.2–0.3). Overall, 84% of respondents were interested in trying doxy-PEP. The factors associated with higher interest were: older age per ten years (1.2; 95% CI 1.0–1.4), Black race and Latinx ethnicity vs. White race (AOR 2.0; 1.2–3.5 and 1.9; 1.2–3.0 respectively), prior STI (AOR 1.7; 1.1–2.5), and having condomless sex (AOR 1.6; 1.1–2.4). Interest did not differ by city, number of partners, serostatus, or PrEP use.

Conclusion. Interest in doxy-PEP was high among a diverse population of MSM in the US Differences in reported STI prevalence may be related to increased detection through screening in PLWH and on PrEP. Additional research to evaluate efficacy/safety of doxy-PEP is needed to potentially reduce STIs among MSM.

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

2273. Neurosyphilis in Pacients With HIV Infection: Clinical Presentation of 94 Cases

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Background. Syphilis remains highly prevalent, particularly in men with HIV infection (HIV+), in whom atypical manifestations and neurosyphilis (NS) are frequent. NS may be asymptomatic and IM benzathine penicillin treatment is ineffective. Although ideal-but not practical-all cases of syphilis in HIV+ patients (patients) should have CSF study to rule out NS. The objective of this study was to quantify and characterize NS cases in HIV+ patients with syphilis.

Methods. Retrospective study from 01-02-2013 to 04-30-2018 at Fundación Arriarán in Santiago, Chile of 618 coinfected patients with CSF study due to neurological, visual or auditory symptoms, or serum VDRL ≥ 1:32. Any positive VDRL titer in CSF was considered demonstrated NS (dNS) and isolated pleocytosis ≥ 20 cells/μL considered probable NS (pNS). Status of HIV infection, syphilis, CSF analysis, NS treatment, and follow-up were characterized.

Results. NS was diagnosed in 94/618 patients (15.2%) with CSF study, (3 women), 80.8% were dNS and 19.2% pNS. Median age was 32 years (range 20–67); median CD4 cell count was 317 cells/μL (IQR of 188–473). In 41.5% NS was diagnosed at entry into care; syphilis was classified as primary in 2.1%, secondary in 22.3%, early–latent in 29.8% and late latent in 45.8%. Most cases of NS (84%) were neurologically asymptomatics (88.8% in pNS). Median CSF leukocytes in dNS was 5 cells/μL (range 0–338), and in pNS 31 cells/μL (range 16–90). Treatment was with IV ceftriaxone in 57/94 (60.6%), and in 39.4% with IV sodium penicillin. Follow-up data with serum VDRL at 3, 6 and 12 months were obtained in 44/94 (41.4%), 37.6% and 24.4% of patients respectively, who presented a decrease of 2-fold serum VDRL in 35/44 (79.5%), 82.5% and 92.3% with data, according to baseline, respectively.

Conclusion. NS is an important complication of syphilis in HIV+ patients; and it should be suspected and actively investigated throughout their care given the high rate of asymptomatic status, even in NSd. Positivity of VDRL in CSF is associated with more symptoms. Ceftriaxone is an alternative therapy, but that requires larger and longer prospective studies for confirmation. The decrease of 2-fold serum VDRL in 6 months may predict treatment success. The role of CSF study post treatment to evaluate this outcome and the criteria for cure have not been well established.

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

2274. Assessment of Anal Papanicolaou Smear Screening and Follow-up Rates in Eastern North Carolina for HIV-Positive Patients Who Are Men Who Have Sex With Men

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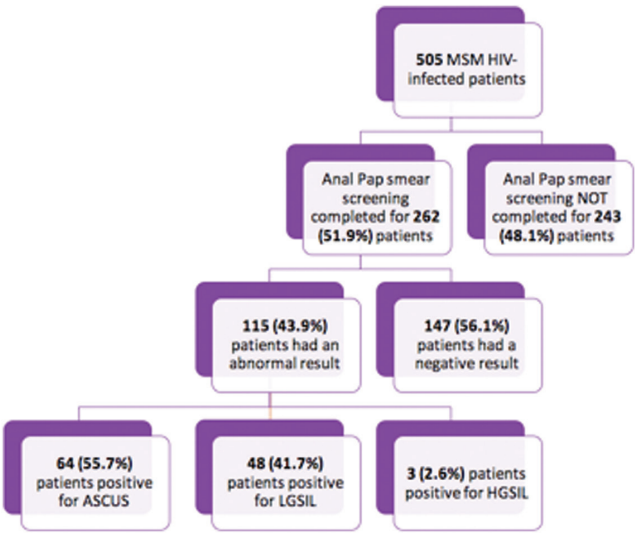
The purpose of this research is to show the prevalence of anal Pap smear abnormalities and follow-up activities among MSM patients receiving HIV care at the ECU Infectious Diseases and International Travel Health Clinic (ECU ID).

Background. Squamous cell carcinoma of the anus (i.e. anal cancer), represents 0.5% of all new cancer cases in the United States in 2017 according to the National Cancer Institute's Surveillance, Epidemiology, and End Results Program. Literature shows that the HIV-infected men who have sex with men (MSM) population is 52 times more likely to develop anal cancer compared with the non-HIV-infected population. Anal Pap screenings have the potential to detect the presence of anal cancer earlier, but no national guidelines exist for performing anal Papanicolaou (Pap) screens among MSM.

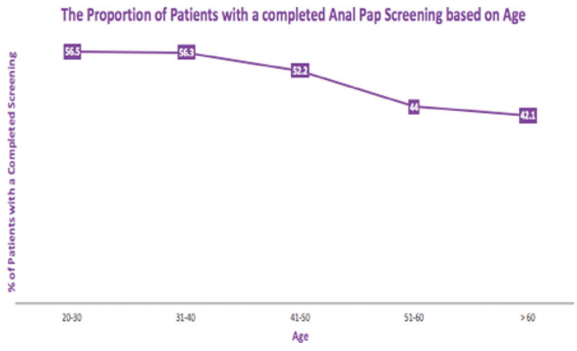
Methods. A retrospective chart review was performed on 505 qualifying patients. Baseline data about anal Pap screening and follow-up rates were gathered. Data were collected from January 1st, 2016 to May 31st, 2017.

Results. Anal Pap smear abnormality findings: Atypical Squamous cells of Undetermined Significance (ASCUS), Low Grade Squamous Intraepithelial Lesion (LGSIL), High Grade Squamous Intraepithelial Lesion (HGSIL).



	ASCUS (n = 64)	LGSIL (n = 48)	HGSIL (n = 3)
No follow-up provided	18 (28.1%)	8 (16.7%)	0
Referral to colorectal surgery	22 (34.4%)	17 (35.4%)	2 (66.7%)
Repeat anal Pap	22 (34.4%)	21 (43.8%)	0
Referral + repeat anal Pap	0	2 (4.17%)	1 (33.3%)

Table 1. The type of follow-up provided for each type of anal Pap smear abnormality.



Conclusion. Our results indicate variation in practice among providers at ECU ID Clinic regarding the screening, the need for a follow-up, and the type of follow-up provided. Additionally, research shows that anal cancer is one of the non-defining AIDS cancers whose incidence increases as the patient ages. However, based on the data, anal cancer screening decreases as the patient ages at the ECU ID clinic. Therefore, a standardized clinic protocol is needed, which may help improve the screening and follow-up rates. Also, a higher percentage of patients with an ASCUS result do not receive follow-up when compared with patients with an LGSIL and HGSIL result. Future research to determine the significance of follow-up for patients with an ASCUS result should be explored.

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

2275. Parental Risk Factors for Fever in their Children 7–10 Days After the First Dose of Measles-Containing Vaccines

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Background. Fever 7–10 days after the first dose of a measles-containing vaccines (MCV) clusters among siblings in families suggesting a genetic basis. To further investigate this association, we evaluated whether clinical conditions in parents are associated with fever after a first dose of MCV in the child.

Methods. We conducted a cohort study including children born in Kaiser Permanente Northern California between 2009 and 2016 who received an MCV between ages 1 and 2 years. Each child was linked with his/her mother and father (where possible). We defined MCV- associated fever as a clinic or emergency department visit with fever code 7-10 days after the first dose of an MCV and identified parental clinical conditions present before or after child birth in electronic health record data. We evaluated parental clinical conditions associated with MCV-associated fever in the child using chi square or T test and multivariable logistic regression analyses

Results. The study included 244,128 children, 192,253 mothers (100 % of children) and 118,046 fathers (59% of children). There were 3750 children (1.54%) with MCV-associated fever. We identified more than 1000 separate clinical conditions in the parents, of which 29 maternal and 11 paternal conditions were significantly associated with MCV-associated fever in the child. After adjustment for maternal and infant covariates, including healthcare seeking behavior, maternal fever (odds ratios [OR] 1.18, 95% confidence interval [CI] 1.06–1.32), respiratory infection with fever (OR 1.20, 95% CI 1.09–1.31), maternal fever after a MCV (OR 5.90, 95% CI 1.35–25.78), migraines (OR 1.14, 95% CI 1.05–1.24), syncope (OR 1.14, 95% CI 1.01–1.27), arrhythmia (OR 1.21, 95% CI 1.00–1.45), essential thrombocythemia (OR 1.93, 95% CI 1.15–3.25) and Addison's disease (OR 2.90, 95% CI 0.90–9.33) were significantly associated with infant fever after a MCV. Paternal fever (OR 1.44, 95% CI 1.20–1.72) and (OR 1.60, 95% CI 1.03–2.48) were associated with MCV-associated fever in the child

Conclusion. Specific parental immune factors were associated with fever in their child 7–10 days after an MCV. These results imply that risk for fever after MCV may be related generally to genetics and particularly to familial immune responses

Disclosures. **N. P. Klein**, Sanofi Pasteur: Investigator, Research grant. Merck: Investigator, Research grant. GSK: Investigator, Research grant. Pfizer: Investigator, Research support. Protein Science: Investigator, Research grant. MedImmune: Investigator, Research grant. Dynavax: Research Contractor, Grant recipient.

2276. Immunogenicity of Takeda's Bivalent Virus-Like Particle (VLP) Norovirus Vaccine (NoV) Candidate in Children From 6 Months up to 4 Years of Age

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Background. With the introduction of routine childhood rotavirus vaccination, norovirus is now becoming the major cause of medically-attended gastroenteritis in children. Takeda is developing a norovirus vaccine (NoV) that contains genotypes GI.1 and GII.4 consensus (GII.4c) sequence VLPs. We report the immunogenicity data of NoV administered to children from 6 months up to 4 years of age.

Methods. Two age cohorts (1 to < 4 years, and 6 to < 12 months, n = 120 per cohort) were enrolled in this ongoing double-blind, randomized, phase 2 dose-finding study conducted in Colombia and Panama. Children received one or two intramuscular doses of NoV formulations containing 15/15, 15/50, 50/50 or 50/150 µg of GI.1/GII.4c VLPs adjuvanted with 0.5 mg $Al(OH)_3$. Vaccinations were on Days 1 and 29, with saline placebo as dose two to maintain blinding in one dose groups. Antibody responses to each VLP were measured on days 1, 29 and 57 as functional histo-blood group binding antigen blocking antibodies (HBGA), expressed as seroresponse rates (SRR), the proportions displaying ≥ 4-fold increases over baseline, and geometric mean titres (GMT).

Results. Each formulation induced dosage-dependent HBGA responses after a single dose, with a further increase after a second dose. In 1- to <4 year-olds HBGA SRR against GI.1 and GII.4c after one dose were 55–62% and 67–82%, respectively. SRR increased to 93–100% and 83–100% after a second dose. In 6 to < 12 month-olds responses were lower after the first dose: SRRs were 10–61% and 17–65% for GI.1 and GII.4c, respectively, increasing to 83–100% and 80–92% after a second dose. GMTs reflected this pattern of responses with higher GMTs for GI.1 and GII.4c achieved with the 50/150 µg formulation than the other dosages after both vaccinations in both age cohorts.

Conclusion. In 6–12 month-old infants and children up to 4 years of age, robust immune responses to the bivalent norovirus VLP vaccine candidates were observed; the highest HBGA responses in both age cohorts were observed after two doses of the 50/150 µg formulation. Further clinical evaluation of these formulations is underway in infants < 6 months of age.

Clinical Trial Registration ***(NCT: 02153112, EudraCT: 2014-000778-20)***

Disclosures. **T. Masuda**, Takeda Pharmaceuticals International AG: Employee, Salary. **I. Lefevre**, Takeda Pharmaceuticals International AG: Employee, Salary. **P. Mendelman**, Takeda Pharmaceuticals International AG: Employee, Salary. **J. Sherwood**, Takeda Pharmaceuticals International AG: Employee, Salary. **S. Bizjajeva**, Takeda Pharmaceuticals International AG: Employee, Salary. **A. Borkowski**, Takeda Pharmaceuticals International AG: Employee, Salary.

2277. Whooping Cough: Epidemiological Changes After Tdap Maternal Immunization Strategy in a Pediatric Hospital

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Background. Whooping cough is a major cause of morbidity and mortality in infants younger than 1 year old. In 2012 Argentina introduced Tdap in pregnancy to prevent infant mortality. The aim was to describe the clinical and epidemiological profile of *Bordetella pertussis* (Bp) comparing pre and post Tdap maternal immunization periods.

Methods. All laboratory PCR confirmed Bp cases between December 2003 and December 2017 were included in "R. Gutierrez" Children's Hospital. Statistical analysis was performed comparing clinical epidemiological features, Bp hospitalization rates (per 10,000 discharges) and lethality rates (%), between pre-vaccination (PreV) 2003–2011 and post-vaccination maternal immunization strategy (PostV) 2013–2017 periods, excluding intervention year (2012).

Results. From 1075 suspected cases, 350(32.6%) were Bp confirmed cases; median age 3 months (IQ = 2–7 months), 38% <3 months, 68% <6 months, 83% <12 months; 55% females; 18% had comorbidities; prematurity 10%, malnourishment 1%, and immunosuppression 1%; 81% required hospitalization, median length of stay was 6 days (IQ = 4–10 days), 17% in UCI. Confirmed cases showed a seasonal pattern predominantly from September through February (spring–summer). In comparison with PreV, PostVcases were older (3 vs. 9 months; $P < 0.001$), required less hospitalization (87% vs. 68%; $P < 0.001$), HR (22.3 vs. 10.9; $P < 0.001$) and LR (6.8% vs. 0%; $P = 0.03$) decreased and had a higher proportion of complete primary vaccination schedule (44% vs. 11%, $P < 0.001$). No difference found in gender (females 62% vs. 54%; $P = 0.23$), length of stay days ($P = 0.51$) or intensive care requirement (18% vs. 17%; $P = 0.91$). All fatal cases occurred in PreV.

Conclusion. After maternal immunization strategy Bp confirmed cases were older, required less hospitalization and had a higher proportion of complete primary vaccination schedule. Hospitalization and lethality rates showed a significant decrease. There were no fatal cases in our center after this intervention.

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

2278. Maternal Immunization Rates With Tetanus–Diphtheria–Acellular Pertussis and Influenza Vaccines in the United States: A Retrospective Claims Database Analysis

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Session: 244. Miscellaneous Vaccines
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Background. The Advisory Committee on Immunization Practices (ACIP) recommends maternal immunization (MI) with tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine during every pregnancy, preferably between 27–36 weeks of gestation, as well as influenza vaccination for all women who are pregnant or who might be pregnant in the influenza season.

Methods. This retrospective cohort analysis characterizes the rate of Tdap and influenza vaccination among large national samples of pregnant women in the United States using administrative claims data. The MarketScan® Commercial Claims and Encounters ("Commercial") and the Multi-State Medicaid Databases ("Medicaid") were used to identify pregnancies between January 1, 2010 and April 30, 2017. Diagnosis and procedure codes that describe gestational age at pregnancy end were used to estimate the date of last menstrual period (LMP) or the index date (Figure 1). Eligible pregnancies had ≥6 months of continuous enrollment prior to index date