004.5 COMPARISON OF THE CLINICAL AND DEMOGRAPHIC CHARACTERISTICS OF NEONATAL HERPES INFECTIONS CAUSED BY HERPES SIMPLEX VIRUS TYPE 1 AND TYPE 2; FINDINGS FROM A POPULATION-BASED SURVEILLANCE SYSTEM, 2006–2012

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Background The epidemiology of neonatal herpes infection (nHSV) is changing as herpes simplex virus type 1 (HSV-1) is an increasingly common cause of genital herpes. Few sources of population-based data for nHSV exist; nHSV has been a notifiable disease in New York City (NYC) since 2006.

Methods To compare the clinical and demographic characteristics of nHSV due to HSV-1 and herpes simplex virus type 2 (HSV-2), we used standard case investigation forms to abstract infant inpatient/outpatient medical records, and maternal labour and delivery records for babies ≤ 60 days of age diagnosed with laboratory-confirmed herpes infection and reported in NYC during 2006–2012. Disease syndromes were grouped as invasive (disseminated/central nervous system infection/death) versus localised (skin/eye/mucous membrane infection,). Cases lacking liver function test results, or lumbar puncture were excluded from analyses of disease syndrome. Bivariate analyses compared clinical and demographic characteristics by viral type.

Results There were 91 cases reported (HSV-1, 40; HSV-2, 36; untyped, 15). Among 76 cases with viral typing, the majority (53%; 40/76) were HSV-1. There were no statistically significant differences by viral type for any variables examined: age ≤ 7 days at presentation (HSV-1, 59% versus HSV-2, 41%), fever (HSV-1, 38% versus HSV-2, 46%), vesicles (HSV-1, 46% versus HSV-2, 53%), invasive disease (HSV-1, 53% versus HSV-2, 70%), case fatality rate (HSV-1, 18% versus HSV-2, 19%), maternal history of genital herpes (HSV-1, 20% versus HSV-2, 20%), maternal genital lesions at delivery (HSV-1, 8% versus HSV-2, 3%), vaginal delivery (HSV-1, 69% versus HSV-2, 61%), white non-Hispanic maternal race/ethnicity (HSV-1, 26% versus HSV-2, 12%), maternal age < 20 (HSV-1, 15% versus HSV-2, 27%).

Conclusions Neonatal herpes infections due to HSV-1 and HSV-2 have a similar presentation, and death rate. To prevent nHSV, candidate HSV vaccines will need to protect against HSV-1, as well as HSV-2 infection in women.

004.6 *MYCOPLASMA GENITALIUM* - IS IT A PATHOGEN IN ACUTE PELVIC INFLAMMATORY DISEASE (PID)?

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Background PID is a polymicrobial infectious condition of the female upper genital tract. *Neisseria gonorrhoeae* (GC) and *Chlamydia trachomatis* (CT), long considered the predominant organisms involved in the pathogenesis of PID, are identified in fewer than half of U.S women diagnosed with acute PID. *Mycoplasma genitalium* (MG) is associated with male urethritis and some evidence suggests an association with other STD syndromes including cervicitis and PID. Our objective was to examine the association between MG and acute PID.

Methods The ACE Trial is a randomised double-blind study evaluating the value of anaerobic therapy for acute PID. At enrollment, specimens were collected from the cervix and endometrium for testing for GC, CT and MG by transcription-mediated amplification. Histology was performed on endometrial tissue. Identification of cervical and endometrial organisms was correlated with endometritis.

Results Among the 125 women diagnosed with acute PID, twenty two percent (n = 27) tested positive for *M. genitalium*, while CT, GC and bacterial vaginosis were present in 14%, 7% and 54%, respectively. Forty six women (37%) had histologic endometritis. Histologic endometritis was more common among those having cervical infections with GC, CT or MG than uninfected women (66% vs. 24%, $p < 0.001$). Among women with endometritis, GC, CT and MG were present in 17%, 30% and 36%, respectively. Endometritis was present in 71% (20/28) of women with endometrial GC, CT or MG. Endometrial identification of GC (100% vs. 34%, $p < 0.05$), CT (77% vs. 32%, $p < 0.01$) and MG (64% vs. 33%, $p < 0.05$) were each independently associated with endometritis.

Conclusion *Mycoplasma genitalium* is identified in 22% of women diagnosed with acute PID. Similar to CT and GC, the presence of MG in the endometrium is highly associated with endometritis among women diagnosed with PID. This study suggests that *M. genitalium* may play an important role in the pathogenesis of PID.

O.05 - Molecular analysis of STI pathogens and their environments

005.1 HIGH GRADE ANAL INTRAEPITHELIAL NEOPLASIA: ONE VIRUS, ONE LESION

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Ba**ckground** Prevention and treatment of anal intraepithelial neoplasia (AIN) in HIV+ men who have sex with men (MSM) is subject of discussion. Knowledge on causative HPV types is crucial in understanding AIN and in vaccination studies. However, data on AIN-specific HPV are limited and whole tissue sections (WTS) often show multiple HPV infections.

In this study, we analysed whether WTS and subsequent laser capture micro-dissection (LCM) with HPV PCR genotyping accurately detects type-specific HPV DNA in individual areas of high grade (HG)AIN.

Methods 31 WTS with HGAIN of 21 HIV+ MSM were analysed by the SPF10 PCR/LiPA25 (version 1) HPV genotyping system. In case of multiple HPV types, PCR was repeated in selected areas of AIN, isolated by LCM.

Results WTS PCR showed a single HPV type in 17 (55%). In the remaining 14 WTS sections with multiple HPV types, PCR was repeated in LCM-isolated dysplastic areas (median: 4 per WTS). In 12 of 14 these samples, the number of HPV types could be reduced to single HPV types within discrete areas of a lesion, resulting in a total of 29 (17+12), in which (components of) HGAIN show a singe HPV type. HPV 16 was found in 14/29 (48%), HPV 18 in 3 and HPV 58 in 3. The remaining HPV types that could be linked to a lesional area were HPV 26, 31, 35, 39, 52, 53, 54, 59, 67, 68/73, 74, 91 and one indeterminate HPV type.

Conclusion WTS PCR and subsequent LCM PCR is accurate in detecting lesion specific HPV types in AIN and it seems that 94% of the AIN-lesions (on macroscopic or microscopic level) are caused by a single HPV type. Apart from HPV 16, the predominant type, a wide range of other HPV types are responsible for HGAIN, which has consequences for vaccination development.

005.2 MEASURING SYPHILIS: QUANTITATIVE PCR CAN BE USED TO MONITOR TREATMENT RESPONSE

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