that had an established *Ng* infection. In this regard, a single dose of carbamazepine was effective in curing (≥99% *Ng* killing by 24h post-treatment) Pex cells infected with multidrug-resistant *Ng* strains, including the ceftriaxone-resistant strains WHO-X (H041) and WHO-Y (F89).
Conclusion Our data identify safe, repurposed, drugs that may have efficacy in preventing and treating *Ng* cervical infection in women.
Disclosure No significant relationships.

O16.6 BASIC SCIENCE AIDS SYPHILIS VACCINE DEVELOPMENT: BLOODSTREAM SPREADING BY THE SYPHILIS SPIROCHETE *TREPONEMA PALLIDUM*

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Background *Treponema pallidum* ssp. *pallidum* (*Tp*) causes syphilis, a sexually transmitted infection characterized by multi-stage disease and diverse symptoms. *Tp* undergoes rapid vascular dissemination, penetrating tissue, placental, and blood-brain barriers to access secondary infection sites via a process that is incompletely understood. The protein Tp0751 is an adhesin on the host-facing surface of *Tp* that mediates adherence to endothelial cells (ECs) lining blood vessel walls. This study explores *Tp* movement across endothelial barriers to enhance our understanding of *Tp* dissemination and identify host interactions that could be targeted for vaccine development.
Methods The methods of affinity chromatography and proteomics were used to identify receptor proteins on host ECs that are bound by Tp0751. Antibody inhibition studies revealed specific receptor regions required for binding. Endothelial barrier traversal was investigated with immunofluorescence and barrier permeability assays. Phosphoproteomics identified endothelial intracellular signaling pathways initiated by Tp0751 by exploring gain/loss of phosphoryl groups on proteins.
Results Here we show *Tp* uses Tp0751 to bind the 67 kDa laminin receptor (LamR) on human EC surfaces. Importantly, the same region of LamR is also targeted by meningitis-causing bacteria including *Neisseria meningitidis* and *Streptococcus pneuomoniae*. Further molecular analyses reveal that *Tp* and Tp0751 disrupt the architecture of human cell-cell junctions in blood vessel walls without altering overall barrier integrity. Phosphoproteomics demonstrates that ECs exposed to Tp0751 exhibit differential phosphorylation on proteins known to promote endothelial barrier traversal by leukocytes and pathogens.
Conclusion These studies suggest a common tissue invasion strategy exists for neuroinvasive pathogens and identifies an interaction that can guide vaccine development for syphilis and other neuroinvasive diseases. Further, exploring *Tp* barrier traversal reveals that *Tp* uses similar mechanisms as immune cells and neurotropic pathogens to invade tissues and cause the detrimental sequelae associated with syphilis. These studies enhance our understanding of *Tp* infection and facilitate targeted syphilis vaccine development.
Disclosure No significant relationships.

O17 – SCREENING AND VACCINATION

Wednesday, July 17, 2019

1:45 PM – 3:15 PM

O17.1 HPV FOCAL 48 MONTH EXIT RESULTS BY AGE FOR WOMEN HPV OR LBC NEGATIVE AT BASELINE SCREENING

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Background HPV FOCAL, a large clinical trial conducted within an organized screening program setting, compared high-risk human papillomavirus (HPV) testing (Liquid based cytology (LBC) triage for HPV positives) to LBC for primary screening for cervical cancer. Primary endpoints included detection of high grade cervical intraepithelial neoplasia (CIN) grade 2 or greater (CIN2+) or grade 3 or greater (CIN3+) over 48 months in women 25–65 yrs of age.
Methods Over 18,000 women were randomized into the HPV and LBC arms. HPV arm: baseline HPV testing; if HPV negative, exit at 48 months with HPV/LBC co-testing. LBC arm: baseline LBC testing; if LBC negative, screen at 24 months with LBC and exit at 48 months with HPV/LBC co-testing (in LBC arm, 48 months disease detection includes disease found at 24 months). We present 48 month exit CIN2+ results by age for baseline negative women.
Results At baseline, in the HPV arm, 8769 were HPV negative and in the cytology arm, 9074 were cytology negative. For all ages, at 48 months significantly more CIN2+ was detected in the LBC vs. HPV arm (10/1000 [95%CI: 8, 12] vs 4/1000 [95% CI: 3,5], respectively, $p<0.01$). In both groups, CIN2+ exit screen detection rates were highest in the women 25–29 yrs of age at baseline screening (LBC 30.8/1,000 & HPV 19.5/1,000) and lowest in women 50+ at baseline (LBC 3.5/1,000 & HPV 1.8/1,000).
Conclusion At FOCAL exit where women were co-tested with LBC and HPV, less CIN2+ was detected across all age strata in women who were baseline HPV negative, than in baseline cytology negative women, confirming the safety of a 48 month interval for HPV negative women. In addition, the highest CIN2+ rates were detected in women who were 25–29 yrs at baseline and lowest in those 50+ at baseline, informing for age appropriate HPV-based program planning.
Disclosure No significant relationships.