

P755 **TREPONEMA PALLIDUM STIMULATED MACROPHAGE-DERIVED EXOSOMAL MIR-146A-5P DECREASED MONOCYTE TRANSENDOTHELIAL MIGRATION**

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Background Exosomes are small vesicles containing a wide range of functional proteins, DNA and RNA. Exosomal RNAs have been implicated in many exosome-mediated biological functions. These cell-derived Exosomes contain numerous miRNAs, which can work locally or can enter the circulation to act at distal sites. Accumulating evidences indicate that exosomal miRNA is linked to the host immune response to infection. In this study, we focused on how *Treponema pallidum* evade immune clearance via exosome-mediated transfer of microRNAs.

Methods We first performed a comprehensive miRNA profiling in exosomes using microarray analysis. Thereafter, RT-PCR was performed to validate the expression of miR-146a-5p in exosome derived from macrophage stimulated by *Treponema pallidum* and syphilis patients. Laser confocal microscopy was used to trace exosomal miR-146a-5p secreted by macrophage into HUVECs. The effect of exosomal miR-146a-5p on monocytes cells transendothelial migration of HUVEC by using migration assay. Luciferase reporter assay were utilized to confirm the binding of exosomal miR-146a-5p to the 3'untranslated region of JAM-C.

Results MicroRNA array was performed and 65 miRNAs were identified. Among the identified miRNAs, miR-146a-5p was one of the most significantly changed miRNAs which high expression in *Treponema pallidum* derived exosomes. We also confirmed that miR-146a-5p was enriched in serum exosomes of syphilis patients. Exosomal miR-146a-5p of macrophages could be transferred into HUVEC and reduce monocyte transendothelial migration by directly targeting the promoter of JAM-C.

Conclusion Our data show that exosomes derived from macrophage stimulated by *Treponema pallidum* expressed high levels of miR-146a-5p which could be delivered to endothelial cells, and decreases monocyte transendothelial migration by targeting JAM-C in endothelial cells, which may enable *Treponema pallidum* evade the host immune clearance.

Disclosure No significant relationships.

P756 **RISK FACTORS FOR PRIMARY AND SECONDARY SYPHILIS AMONG FEMALES IN CHICAGO, 2010–2017**

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Background Trends in congenital syphilis (CS) usually parallel those of primary and secondary (P&S) syphilis in women. Chicago has invested in a multi-pronged approach to address the syphilis epidemic in the city. Between 2010 and 2017, the total number of female P&S syphilis cases in Chicago decreased by 37% (from 87 to 55 cases) in parallel with a decrease in the number of CS cases (from 19 to 11). At the same time, national rates of CS increased 140%, from 9.7 per

100,000 live births in 2010, to a high of 23.3 per 100,000 live births in 2017.

Methods A retrospective analysis of surveillance data from 2010 through 2017 was performed on female cases of P&S syphilis (n=483) reported to the Chicago Department of Public Health.

Results Of 483 cases reported during this time, 382 (79.1%) were non-Hispanic black, 34 (7.0%) Hispanic, 27 (5.6%) non-Hispanic white, and 40 (8.3%) other or unknown ethnicity. Approximately 7% (32) of females were co-infected with HIV. The median age was 27 and did not change significantly over time, ranging from 24 to 32. Overall, 23% of interviewed females reported having sex while intoxicated with alcohol or drugs, and 15% reported having sex with anonymous partners. Only 6.2% of females diagnosed with P&S syphilis reported exchanging drugs for sex or money and <1% reported intravenous drug use or sex with partners using intravenous drugs.

Conclusion Our findings suggest that certain sexual behaviors, in particular anonymous sex and sex while intoxicated, are more frequently reported by women infected with syphilis. To curb the spread of CS further, there is a need to enhance surveillance and collect comprehensive behavioral risk factor data for females. Future interventions should focus on provider and public education, media campaigns targeted towards these sexual behaviors, and expansion of screening programs among females of reproductive age.

Disclosure No significant relationships.

P757 **AN EVALUATION OF THE PROVINCIAL 'SYPHISTORY' CAMPAIGN IN BRITISH COLUMBIA, CANADA**

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Background Infectious syphilis rates have been increasing in British Columbia (BC), Canada, primarily among gay, bisexual, and other men who have sex with men (gbMSM). In response, a provincial syphilis campaign ("Syphistory") was launched in January 2017, and included posters in venues frequented by gbMSM (physical and online) and a campaign-specific educational website. Goals of the campaign were to increase knowledge of syphilis and syphilis screening.

Methods Website metrics were collected and analyzed via Piwik Analytics tool. Pre and post-campaign surveys were conducted to assess knowledge of syphilis using a convenience sample of clients attending STI clinics in the Vancouver area. One-sided t-tests were used to analyze change in knowledge scores. Interrupted time series analysis was conducted to assess the change in syphilis screening rate among males before versus on or after January 2017.

Results During 2017 there were 4,421 unique visitors to the Syphistory educational website, of which 71% were between February and April. Mean survey score pre-campaign was 8.96/12 (n=137) and 9.12/12 (n=266) post-campaign (p=0.223). Those who reported seeing the campaign demonstrated a greater knowledge of syphilis (mean 9.7/12 versus 8.9/12, p<0.001). Provincial syphilis testing volumes among males were 93,311 and 101,967 in the 12 months before and after campaign implementation, respectively. Adjusting for the historical trend of increasing syphilis screening, there was a