230. Clinical Features and Treatment Outcomes of Bone-Joint Infection Between Bacteria and Mycobacterium Tuberculosis

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**Session:** 45. Clinical: Bone and Joint Infection

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**Background.** Bone-joint infection is an emergency condition that requires immediate management. Delayed in treatment or improper management can lead to a significant morbidity and mortality.

**Methods.** The medical records of patients with bone-joint infection seen at Maharaj Nakorn Chiang Mai Hospital between 1 November 2010 and 30 September 2015 were reviewed. The diagnosis of bone-joint infection was confirmed by pathogen identification or pathological report. Only those with adequate clinical features and treatment outcomes were included for analysis.

**Results.** Of 125 bone-joint infected patients seen during the study period, 92 patients were caused by bacterial infection and 33 from tuberculous infection. Their mean age was 41.3 ± 15 years, and had total disease duration of 7.1 ± 8.2 months. Sixty-four percent were men. Of 33 TB cases, 24 (72.7%) had spinal involvement. Among 92 cases with bacterial infection, 52 (56.5%) had non-spinal joint involvement, and 38 (41.3%) had non-spinal bone involvement. Regarding clinical features, TB cases had significantly longer duration of symptoms, 5.3 ± 6.1 months. Multivariate logistic regression analyses showed that neurological manifestations (adjusted OR = 314.1, 95% CI 1.16–19.72, P = 0.0034). Any additional surgery within 90 days of arthroplasty increased risk for infection (22% vs. 11%, P = 0.03). Among the 46 SSIs, knee surgeries experienced more infections than hip surgeries (67% vs. 33%, P = 0.07).

**Conclusion.** In this study, recent respiratory tract infection in previous 30 days prior to surgery were more likely to develop infection compared with patients with no history of infection (96.6% vs. 34.2%; 95% confidence interval 1.62–7.22, P = 0.0034). The detection rate of NG in males and females was 0.11 and 0.08%, respectively. In the age group of 25–29 years (24/344, 6.98%) among males, while in a slightly younger age group (20–24 years (33/496, 6.32%) among females. This study found that the detection rate remained high, which suggests those who do not use a condom during deployment are at a higher risk for STI acquisition than pre- or post-deployment. These data may inform interventions targeting high STI acquisition risks and time periods to increase condom use.

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231. Factors Associated with Not Using a Condom at Last Sex Among Sexually Active US Navy and Marine Corps Personnel Across a Shipboard Deployment

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**Session:** 46. Clinical: Sexually Transmitted Infections

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**Background.** Condom use is highly effective in preventing sexually transmitted infections (STIs); however, data on this are limited among US military personnel who may be at a higher risk for STI acquisition across a deployment cycle. This study examined factors associated with no condom use at last sex at three time points, pre- (T1), during (T2), and post-deployment (T3), across a US military shipboard deployment cycle.

**Methods.** Data were collected among active duty US Navy and Marine Corps personnel assigned to 11 deploying ships using an anonymous, voluntary, self-completed survey, including demographics, condom use at last sex, sexual risk behavior, STI diagnosis, alcohol use, and drug use with sex. Descriptive and generalized regression model analyses were conducted to determine the effects of main exposures after adjusting for demographic characteristics, with statistical significance defined as P < 0.05. When longitudinal data were included, generalized estimating equations were used. Models included their interaction with time.

**Results.** Among participants, n = 1,900 (T1), n = 549 (T2), and n = 1,168 (T3) reported age and sex, were sexually active, and included in the analysis. The proportion of individuals who used a condom at last sex was significantly higher during T2 (53%, P < 0.001) than T1 (27%) and T3 (28%), with an STI prevalence of 1% (T1), 7% (T2), and 2% (T3). In adjusted models, participants not using a condom at last sex were significantly more likely to report an STI diagnosis (OR 2.26, 95% CI 1.19–4.28), screen positive for hazardous alcohol use (OR 1.44, 95% CI 1.21–1.71), and use drugs to enhance sex (OR 1.37, 95% CI 1.06–1.77), but less likely to engage in transactional sex (OR 0.69, 95% CI 0.50–0.94). Associations between condom use and main exposures did not differ significantly by time point.

**Conclusion.** Although condom use was significantly higher during T2, STI prevalence remained high, which suggests those who do not use a condom during deployment are at a higher risk for STI acquisition than pre- or post-deployment. These data may inform interventions targeting high STI acquisition risks and time periods to increase condom use.

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232. The Detection Rates of Urogenital Chlamydia trachomatis and Neisseria gonorrhoeae in Chinese Population Applying for U.S. Immigration

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**Session:** 46. Clinical: Sexually Transmitted Infections

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**Background.** Medical screening for gonorrhea is under the mandatory requirements of the Center for Disease Control and Prevention for aliens applying for U.S. immigration. Gonorrhea is frequently associated with Chlamydia trachomatis (CT) infection. There is limited data on the detection rates of urogenital CT and Neisseria gonorrhoeae (NG) in Chinese population.

**Methods.** Data on physical examinations of applicants in Guangdong International Travel Health Care Center, China were collected and retrospectively analyzed. The nucleic acids of urogenital CT and NG from urine specimens were detected by fluorescent probe PCR using cobas 4800 CT/NG Amplification Detection Kit (Roche Molecular Systems, Inc.). The detection rates of CT and NG among the overall population were assessed. In addition, the detection rates of CT by age and gender were also evaluated.

**Results.** In total, 10,549 applicants underwent physical examinations from September 2016 to March 2017. Mean (SD) age was 41.4 (15.6) years, ranging from 15 to 90 years. The proportion of females (56.17%) was higher than that of males (43.83%). Of the 10,512 people who completed the detection of CT, 369 (3.51%) were CT-positive. The detection rate of CT was significantly higher in females (4.13%) than males (2.69%) (Table 1). The highest CT-positive rate was observed in the age group of 25–29 years (24/344, 6.98%) among males, while in a slightly younger age group of 20–24 years (34/524, 6.49%) among females (Figure 1). Of the 10,510 applicants who completed the detection of NG, 10 (0.10%) were NG positive. The detection rate of NG in males and females was 0.11 and 0.08%, respectively (Table 1).

**Conclusion.** Our study first reported the detection rates of urogenital CT (3.51%) and NG (0.10%) among Chinese applicants for U.S. immigration. The highest positive rate of CT was observed among young and middle-aged people, which should gain more attention.

**Table 1. The positive rate of the detection of CT and NG**

| Item | Gender | Positive number | Positive rate (95% CI) (%) |
|------|--------|-----------------|--------------------------|
| CT   | Male (n = 4608) | 124 | 2.69 (2.22–3.16) |
|      | Female (n = 5906) | 245 | 4.15 (3.64–4.66) |
|      | Total (n = 10,512) | 369 | 3.51 (3.16–3.86) |
| NG   | Male (n = 4608) | 5 | 0.11 (0.01–0.20) |
|      | Female (n = 5904) | 5 | 0.08 (0.00–0.16) |
|      | Total (n = 10,510) | 10 | 0.10 (0.04–0.15) |

CT: chlamydia trachomatis; NG: neisseria gonorrhoeae; CI: confidence interval.
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234. Effect of Rectal Hygiene on Sexually Transmitted Infections Among HIV-Negative Men Who Have Sex with Men (MSM)

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Background. Rectal gonorrhea (NG) and chlamydia (Connecticut) infections are common among men who have sex with men (MSM). Rectal douching/enemas (RDE) is a common practice among MSM that can affect the rectal microbiome. It is unclear if this practice is associated with acquiring rectal infections (RI) with either NG or CT.

Methods. From 2013–2015, 398 adult HIV-negative MSM and transwomen were enrolled in a randomized controlled study on text messaging for adherence to pre-exposure prophylaxis (PrEP). Participants were surveyed on sexual behavior, frequency of RDE and other risk factors with RI. Multivariable logistic regression model was used to control for confounding and assess the association of RDE with RIs. Confounders (i.e., age, number anal receptive sex, number sex partners) were selected a priori for inclusion in the final model based on a causal model and statistical significance.

Results. Of 397 participants, 262 (67%) performed RDE and 132 (33%) had at least one NG or CT rectal infection over 48 weeks. Number of condomless anal receptive sex acts (mean = 19, P < 0.001), condom use for anal receptive sex (P = 0.017), number of male sex partners in past 3 months (mean = 14, P = 0.001), and the use of poppers (P < 0.001) were associated with RI. There was no significant association between nutritional habits, probiotic foods or supplements and RI, with the exception of energy bars (P = 0.029). Controlling for confounders, RI was associated with RDE less than weekly with OR = 1.02 (95% CI 0.52–1.99) while RDE weekly or more had OR = 2.08 (95% CI 1.03–4.17). Stratified by number of partners, MSMs with more than the median (6) number of partners had OR = 4.96 (95% CI 1.29–19.03) if performing RDE less than weekly, and OR = 6.03 (95% CI 1.55–23.49) if weekly or more.

Conclusion. Rectal hygiene with douching/enemas is a common practice among MSMs on PrEP which increases the odds of acquiring rectal NG and/or CT. This finding is suggestive for the use of rectal hygiene products/practices as potential targets for sexually transmitted infection prevention.