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THE EPIDEMIOLOGY OF HIV INFECTION AMONG YOUNG ADULTS IN BRAZIL

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Background Brazil has a strong HIV prevention public health program since 1980s that includes continuous and free nationwide distribution of male and female condoms, rapid test triage, and edumunication strategies. Even so, the detection rate of HIV has increased, achieving 14.3/1000,000 individuals aged 15–24 years (2017). Regarding this alarming situation, we aimed to access the HIV prevalence and associate characteristics in young Brazilian adults (aged 16 to 25 years).

Methods Data from POP-Brazil Study, a cross-sectional, nationwide, multicenter study with sexually active men and women who use the public health system in Brazil were obtained. Trained primary health care professionals asked participants about sociodemographic characteristics and presence of HIV. Additionally, they invited to undergo a rapid HIV test. Those individuals that not answered the question or did not take the laboratorial test were considered missing values. The measures were weighted by population size in each capital and by sex.

Results Of 8,581 participants, 3,009 do not provided information about HIV, and 49 (1.54%, CI95% 0.83%–2.25%) reported positivity or were reagent in the rapid HIV test, without significant differences between Brazilian regions. The positivity was significantly higher in men than women (2.7% vs. 0.6%, $p < 0.001$), as well as in non-married participants ($p < 0.001$), those with more than two partners in the last year ($p < 0.009$), homosexual intercourse ($p < 0.001$) or non-vaginal sexual behavior ($p < 0.001$). The use of condom in the first sexual intercourse was not significant different between the groups of infection.

Conclusion The high prevalence of HIV is even more concerning taking into account the high proportion of missing individuals. Association of HIV with homosexual intercourse and non-vaginal sexual behavior were more frequently in male. Despite the sustained Brazilian public health program, this particular age range need to be on the focus of prevention strategies.

Disclosure No significant relationships.

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ARE PARTURIENT WOMEN ON ANTI-RETROVIRAL THERAPY COMPLYING WITH THE RECOMMENDED SIX-MONTHS EXCLUSIVE BREASTFEEDING?

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Background Exclusive breastfeeding is recommended for the first six months in HIV-exposed infants in sub-Saharan Africa. This cost-effective and high impact strategy has proven to promote healthy infant growth, development and survival of children in resource poor settings. Despite antenatal and postnatal counselling and support on the choice of feeding for HIV-exposed infants, the practice of EBF remains low in sub-Saharan Africa. Given the paucity of data on the topic in the study setting, we examined the prevalence of six-month exclusive breastfeeding.

Methods We followed up parturient women enrolled in the East London Prospective Cohort Study with the aim of determining the rate and determinants of exclusive breast feeding in the region. Relevant items on demographic, lifestyles and duration of EBF were obtained using structured interviews. Binary logistic analysis was fitted to examine the significant determinants of EBF.

Results Six infants died within the first six months in the cohort. Of the parturient women with complete responses (469), the prevalence of exclusive breastfeeding for the recommended six months was 32% ($n=150$). Women who were unemployed in the past 12 months had a higher likelihood of exclusively breastfeeding their infants for 6 months compared to women who were employed [AOR:1.68, CI:1.08–2.63]. Also, women who did not consume alcohol beverages in the past 12 months had a higher odds of exclusively breastfeeding their infants [AOR:1.77, CI:1.12–2.78]. Adherence to antiretroviral therapy [AOR:0.83; CI:0.53–1.29], disclosure of HIV serostatus to sexual partners [AOR:0.98; CI:0.51–1.94] and marital status [AOR:1.32; CI:0.86–2.02] were not significantly associated with exclusively breastfeeding of infants for six months.

Conclusion Very low rate of exclusive breastfeeding for six months among HIV-infected parturient raises serious concern for mother-to-child transmission, morbidity and mortality of exposed-infants in the study setting. Intervention strategies to promote and monitor compliance with exclusive breastfeeding recommendations require targeted research.

Disclosure No significant relationships.

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DIFFUSE SKEWING OF TH17/TREG RATIO IN THE ANORECTAL MUCOSA OF HIV+MSM WITH HPV-ASSOCIATED DYSPLASIA

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Background Anal Human Papillomavirus (HPV) infection is common in MSM. While most HPV infections resolve spontaneously, some persist and cause anal intraepithelial neoplasia (AIN) that can progress to anal cancer. To better understand the mucosal immunopathogenesis of HPV/AIN, we compared mucosal T cell subsets between AIN-free mucosa and AIN lesions within HIV+ART+ MSM.

Methods Anal swabs from 46 participants were used to 1) screen for 46 mucosal HPV types by microsphere-based genotyping and 2) test for HIV RNA levels by RT-PCR. AIN-free mucosa was biopsied, and (where applicable) additional biopsies were taken from histology-confirmed areas of AIN. Treg markers (CD25, FoxP3) and a Th17 marker (CCR6) were assessed by flow cytometry. Statistical comparisons were assessed between groups (Mann-Whitney) and within the same individual (Wilcoxon).

Results Th subsets were first compared between clinically normal mucosa and AIN lesions within AIN+ individuals, and no lesion-specific alterations were apparent. When we compared clinically normal mucosa between study groups, participants with high-grade AIN had a reduced Th17/Treg ratio compared to participants with no AIN (HGAIN= 7.83, No AIN= 19.75; $p = 0.007$) or participants with low-grade AIN

(LGAIN= 14.1; $p= 0.017$). This difference was primarily driven by an increase in Treg frequencies (HGAIN= 4.00%, LGAIN= 2.38%, No AIN= 1.88%; $p= 0.048$), and participants with HPV16/18 also had significantly higher Treg frequencies (HPV16/18= 4.02%, No HPV16/18= 2.68%; $p= 0.021$). Th17 frequencies did not vary with HPV status, HPV16/18 positivity or AIN stage. No mucosal parameters were associated with anorectal HIV RNA detection.

Conclusion HPV infection and high-grade AIN were associated with diffuse mucosal Treg infiltration, reducing the mucosal Th17/Treg ratio in participants with high-grade AIN. While changes in T cell immunology did not increase HIV RNA shedding in ART+ MSM, their effect on ART-naïve men or HIV susceptibility in HIV-negative men will be interesting areas for future research.

Disclosure No significant relationships.

P156 STUDY ON THE EFFECT OF SLANDC-MEDIATED ADCC IN HIV-1-INFECTED PATIENTS

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Background Antibody-dependent cell-mediated cytotoxicity (ADCC) mediated by natural killer (NK) cells plays a critical role in HIV-1 infection. As a novel subset of dendritic cells (DCs), 6-sulfo LacNAc-expressing DCs (slanDCs) also express CD16. However, the levels of slanDC-mediated ADCC during HIV-1 infection are not well addressed.

Methods Forty-five HIV-1-infected subjects were enrolled and 19 HIV-1 negative individuals were used as healthy controls (HCs). The complex of gp120 and anti-gp120 was used to stimulate peripheral blood mononuclear cells (PBMCs) and the level of TNF-alpha secreted by slanDCs was detected using intercellular staining of flow cytometer.

Results The counts of slanDCs in HIV-1-infected and treatment naïve patients were significantly lower than those of HCs and those receiving anti-retrovirus therapy (ART) ($P=0.0331$, $P<0.0001$). The number of slanDCs in HIV-1-infected patients with ART was significantly higher than those who did not receive ART, indicating that ART could help HIV-1-infected individuals to recover the number of slanDCs. The level of slanDC-mediated ADCC evaluated as the level of TNF-alpha production by slanDCs stimulated by the complex of gp120-anti-gp120, was significantly lower in HIV-1-infected subjects as compared with HCs and those receiving ART ($P=0.0011$, $P=0.0002$). The expression of CD16 (MFI) by slanDCs from HIV-1-infected patients receiving ART was significantly higher than that from HIV-1-infected untreated and HCs ($P=0.0014$, $P=0.0003$), and the expression of CD16 (MFI) in slanDC was positively correlated with the ADCC effect ($P<0.0001$).

Conclusion The slanDC-mediated ADCC existed in HIV-1-infected patients and the level could be enhanced by ART, suggesting an alternative pathway involved in ADCC in HIV-1 infection.

Disclosure No significant relationships.

P157 CROWDSOURCING METHODS TO ENHANCE HIV AND SEXUAL HEALTH SERVICES: A QUALITATIVE SCOPING REVIEW OF EVIDENCE

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Background Crowdsourcing, a process where non-experts and experts work together to solve a problem, may be useful for developing HIV and sexual health interventions, programs, and research. This qualitative scoping review examines evidence on crowdsourcing to improve HIV and sexual health services.

Methods We searched four databases in June 2018. Studies were included if they involved crowdsourcing activities, focused on HIV/sexual health, and described the methodology in sufficient detail. We used a content-analytic approach to describe major findings related to types of crowdsourcing models, phases of implementation, advantages, and disadvantages.

Results Our search strategy yielded 431 citations. A total of 17 studies were included for analysis. Four studies were from high-income countries, seven from middle-income countries, one from a low-income country, and five were global. Crowdsourcing was used to develop interventional materials to promote condom use, engage the community in sexual health campaigns, and inform policy changes in sexual health. We identified five types of crowdsourcing models: open contests, hackathons, open forums, extraction of data from social media platforms, and incident reporting systems. Open contests solicit solutions to problems and award prizes to finalists based on predetermined criteria. Hackathons are intensive, approximately 72-hour contests that bring together people to complete a specific task. Crowdsourcing projects shared four common phases: preparation, soliciting crowd inputs, judging submissions, and sharing solutions. Advantages of crowdsourcing included higher potential for innovation due to crowd heterogeneity, encouragement of multisectoral collaboration, empowerment of vulnerable populations, and creation of cost-effective and culturally appropriate intervention strategies. Disadvantages included temporal transience and the challenge of sustaining engagement over time.

Conclusion This scoping review revealed diverse applications of crowdsourcing in HIV/sexual health programs and research. Further crowdsourcing research is needed in low and lower-middle income countries.

Disclosure No significant relationships.