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High burden of sexually transmitted infections and poor diagnostic performance of syndromic approaches within a decentralised HIV care setting in Eswatini

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Introduction

Sexually transmitted infections (STI's) are a public health threat. Syndromic approaches based on clinical symptoms have been suggested as having poor diagnostic performance, particularly in the type of settings where MSF is operational. We assessed the burden of STI's and the diagnostic performance of a syndromic approach within an MSF-supported HIV/STI project in Eswatini.

Methods

We conducted a cross-sectional study, enrolling adults accessing routine HIV testing and antiretroviral care services in six clinics in Shiselweni, from July 2022 to January 2023. HIV testing counselors performed HIV testing and nurses assessed patients for STI's. Laboratory investigations included antibody-based rapid diagnostic tests (RDT's) for *Treponema pallidum* (TP), hepatitis B (HBV) and hepatitis C (HCV). The molecular platform Xpert was used to test urine samples for *Chlamydia trachomatis* (CT), *Neisseria gonorrhoea* (NG), *Trichomonas vaginalis* (TV), *Mycoplasma genitalium* (MG), vaginal/anal swabs for human papillomavirus (HPV), and plasma for HIV viraemia to test for acute HIV infection (HIV). We calculated the prevalence of STI's, and assessed diagnostic performance of a syndromic approach to diagnose male urethritis (MUS) and vaginal discharge (VDS) syndromes, versus laboratory-based testing.

Ethics

This study was approved by the Eswatini Health and Human Research Review Board and by the MSF Ethics Review Board.

Results

Of 1,041 study participants, 682 were women (65.5%), and the median age was 30 (interquartile range, IQR, 24-38) years. Overall, 280 (26.9%) were known HIV-positive and of 755 with unknown HIV status, 30 (4.0%) were newly diagnosed with HIV, of whom seven (23.3%) had AHI. 308 (29.6%) patients had at least one of the following three pathogens identified: NG 121 (11.6%); CT 155 (14.9%); TV 109 (10.5%). MG was detected in 33/330 participants (10.0%). In addition, 105 (10.1%) had antibodies against TP, 49 (4.7%) against HBV, and three (0.3%) against HCV. HPV prevalence was higher in tested women (104/196; 53.1%) versus men (5/27; 18.5%; $p=0.001$). Prevalence of NG/CT/TP was highest in newly-diagnosed HIV cases (48.2%) versus known HIV-positive cases (26.8%, $p=0.019$). Based on the syndromic approach, 188/634 (29.7%) had a VDS, and 97/334 (29.0%) a MUS. Diagnostic performance of the syndromic approach was better in men (MUS: sensitivity: 66.7%, specificity 87.5%; positive predictive value, PPV, 70.1%, negative predictive value, NPV, 85.7%), versus women (VDS: sensitivity 35.9%, specificity 72.9%; PPV 35.1%, NPV 73.5%).

Conclusion

A high burden of STI's in Eswatini and poor diagnostic ability of the syndromic approach in this setting, calls for new approaches for STI care in MSF-supported sexual and reproductive health programmes in resource-poor settings.

Conflicts of interest

None declared.