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Profile of Clients of HIV Testing and Counseling in a Tertiary Care Center and Need of Testing in Tuberculosis

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Abstract

Introduction: Sexually transmitted infection is public health issue that amplifies HIV burden globally. At National Center of AIDS and STD Control, annual reported STI are rising steeply recently. Incidence of HIV is 0.03% while prevalence in adult population is less than 1%. National HIV testing guidelines 2017 recommends HIV tests should be performed in tuberculosis and medical conditions. However, it is not routinely done in Nepal.

Objective: To assess profile of STI and HIV among patients attending HIV testing and counseling center of tertiary hospital, and to assess fraction of tuberculosis patients undergoing HIV testing.

Materials and Methods: All patients attending HIV testing and counseling center were tested for HIV. Tests for STI were done based on patient symptoms. Data collected were analyzed with SPSS.

Results: Suspected STI (41.1%) was commonest cause of HIV testing. Among STI, gram positive diplococci were noted in 11.5% and 3.4% had PCR positive Chlamydia. Only 19.4% (7 out of 36) of total tuberculosis patients in hospital were screened for HIV, among which, 57.14% (4 out of 7) were seropositive for HIV, which is noteworthy.

Conclusion: Our study shows patterns of STI, and that gonorrhea and chlamydia could be underdiagnosed in Nepal. Every patient with tuberculosis should routinely be screened for HIV. But only small fraction of tuberculosis patients underwent HIV screening, out of which HIV positivity was high, reflecting the gap and need for routine HIV screening in TB patients.

Key words: Acquired Immunodeficiency Syndrome; HIV infections; Sexually Transmitted Diseases; Tuberculosis

Introduction

HIV testing and counseling (HTC) is entry point of HIV care services.¹ It identifies important populations for targeting of HIV prevention efforts. In Nepal, HIV prevalence is decreasing since 2005.^{2,3} However, research on HIV heavily concentrates on high risk populations like sex workers, labor migrants, etc owing to concentrated epidemics among them.^{4,5} Population based or facility center based studies on HIV are minimal. STIs increase acquisition of Human immunodeficiency virus (HIV) and World Health Organization (WHO) STI estimates in 2012 showed highest prevalence of curable STI in South-East Asia.⁶ Globally, current trends show decline in syphilis and gonorrhea, with increase in chlamydia.⁷ There

is limited data on STI in Nepal due to lack of fully functional surveillance system. Previously, syphilis was commonest STI reported in Eastern Nepal while prevalence of gonorrhea and chlamydia were low.^{8,9} Our study is aimed at estimating the patterns of STI in Central Nepal.

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Materials and Methods

This is a cross-sectional observational hospital-based study conducted in HIV testing and counseling clinic in Dermatology Department. All patients attending HTC clinic from December 2016 to November 2017 were enrolled; following approval from Institutional Review Board of Kathmandu University School of Medical Sciences. An informed consent was taken. Demographic characteristics such as age, gender, occupation, use of condom, high risk behavior and clinical symptoms of genital ulcer, discharge and genital lesions were noted. Patients of all ages presenting to HTC clinic were included. HIV I & II reactivity was tested in all patients with HIV Tridot rapid test kit. Positive results were further confirmed by HIV ELISA tests (ACCU Diag. Diagnostic Automations. USA). Tests for various STI were done based on clinical symptoms. In men with urethral discharge, samples for gram stain and pus culture were collected under direct guidance of the principal investigator, in order to prevent false negative results due to inappropriate sample collection technique. In all cases with urethral discharge, early morning first void urine sample were collected for Chlamydia PCR, performed by microbiologist at our center. The principal investigator completed the case proforma containing clinical, demographic characteristics and investigations done in each patient. Data was entered in Microsoft excel and analysed by SPSS. Descriptive data will be provided in tables and figures.

Results

In this study, among 280 candidates undergoing HTC, majority (84.6%) were in the age group between 20-49 years. (Table 1) Mean age of 31.20+/- 0.62 years. Among them, 81.4% were male and only 18.6% were female, with male to female ratio of 4.3:1. Only 5(0.17%) patients were positive for HIV, of which 3 were men and 2 were women (M:F=1.5:1).

Table 1: Age of the patients attending HTC center.

Age	Number	Percentage
less than 20	21	7.5
20-30	108	38.6
30-40	83	29.6
40-50	46	16.4
50-60	19	6.8
60+	3	1.1
Total	280	100.0

Occupation of the clients were labor migrants 116 (41.5%), drivers 67 (23.9%), laborers 33 (11.8%), salesmen 8 (2.8%), immigrants from India 12 (4.3%), housewife 34 (12.1%) and Others 10 (3.6%). Condom use was found in 97 (34.6%) cases, among which only 42 (15%) patients were using it regularly during each sexual contact. Hormonal contraception was noted in 32 (22.4%) cases and as high as 150 (53.6%) cases gave no history of any contraception.

The most common reason for testing was suspected STI seen in 115 (41.1%) patients, followed by skin diseases in 98 (35%), prolonged fever in 14 (5%), other medical causes in 17 (6.1%), patient initiated or demanded in 21 (7.5%), IV drug abuse in 8 (2.9%) and tuberculosis in 7 (2.5%) patients respectively (Figure 1).

Among patients with suspected STI, 87 (75.65%) had some form of sexually transmitted infections, 23 (20%) had venerophobia and 5 (4.35%) had history of STI in partner.

Commonest STI was genital verruca (Table 2). Among male patients with urethral discharge, gram stain showed gram negative intracellular diplococci in 10 patients (11.5%), out of which culture was positive in only four patients. Chlamydia PCR was sent in all cases of suspected gonorrhoea, out of which, only 3 (3.4%) were positive for Chlamydia.

Table 2: Sexually transmitted infections undergoing HTC

Diagnosed STI	Number (Percentage%)
Genital verruca	29 (33.3%),
Genital discharge	19 (21.8%)
Genital ulcer	13 (14.9%)
Orogenital candidiasis	14 (16.1%),
Genital molluscum	8 (9.1%)
Syphilis	4 (4.6%)
Total	87 (100%)

Among total patients tested for HIV, only 5(1.78%) were reactive for HIV. Among seropositive cases, 4 out of 5 seropositive cases were of tuberculosis. (Figure 2).

It is important to note that cases of TB tested for HIV was low compared to total TB cases in the hospital. There were 36 cases of diagnosed TB in our hospital this year, but only seven (19.44%) TB patients were referred for HIV testing (Figure 3).

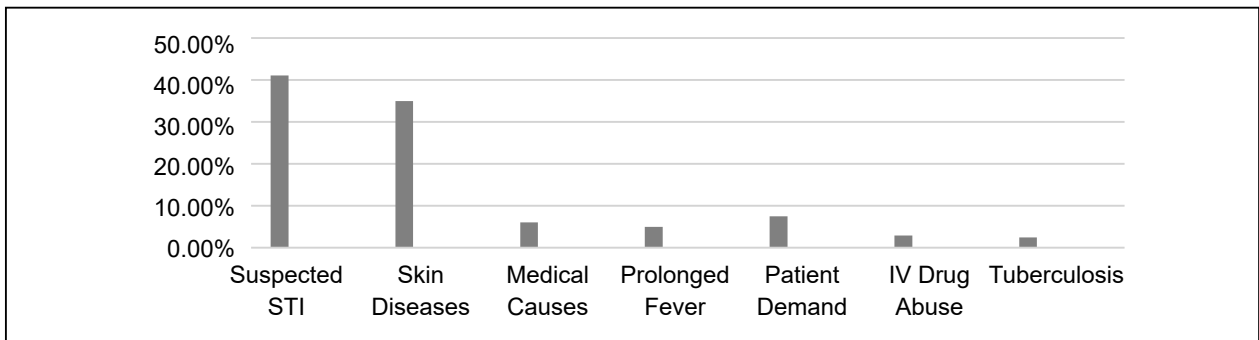


Figure 1: Reasons for HIV testing and counseling.

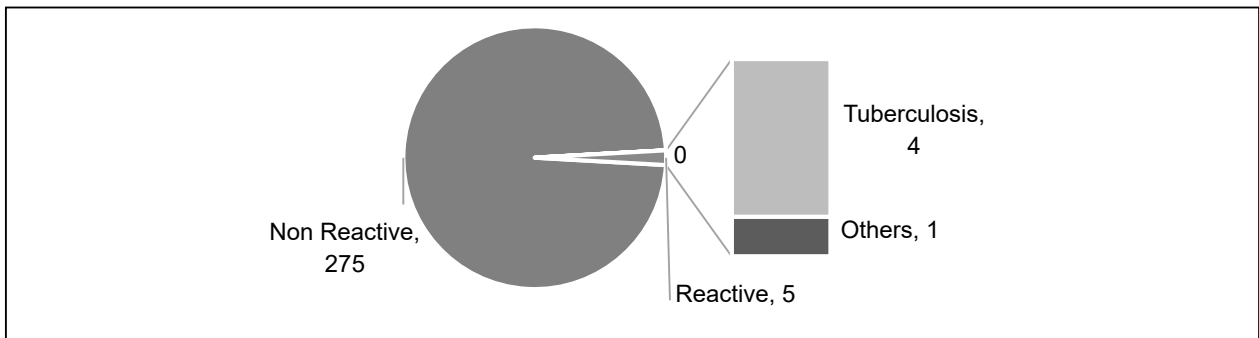


Figure 2: HIV test results of total patients.

Discussion

HIV counseling and testing is the first step in detecting and managing HIV. Adult prevalence of HIV is less than 1% and incidence is 0.05% worldwide.¹⁰ In Nepal, prevalence of HIV is low, affecting 0.17% adults (15–49 years) by December 2016.³

HIV counseling and testing is one of the key strategies that decreased the burden of HIV.^{3,10} There were 175 HTC centers in Nepal that provide free of cost services to general population.¹¹ HTC identifies important populations for targeting HIV prevention efforts. High risk groups include intravenous drug abuse (IVDA), female sex worker (FSW), labor migrants (LM), men who have sex with men and transgender (MSM-TG) community. The prevalence of HIV is over 5-fold more in high risk population compared to general populations and they are 13-14 times more at risk to contract HIV.¹² National Center for AIDS and STD Control (NCASC) and IBBS (Integrated Biological and Behavioral Survey) in Nepal showed that majority of STI and HIV is concentrated among high risk groups and many studies are based on these high risk groups.^{4,5,9}

In our study, 1.7% of tested subjects were positive for HIV. NCASC reported 1.2% HIV positives among tested and highest burden (1.6%) was observed in central Nepal, similar to our study.¹¹

Majority of our HTC clients were between 20-49 years of age. In Nepal, 48% of the total population falls in this vulnerable age group of 15-49 years, and our national data is consistent with our report.^{2,11} Ratio of male to female was 4.3:1 in this study. Higher ratio of male patients could be because of few reasons such as high risk behavior among men such as multiple partners, outdoor profession such as driving and labor migrants and hesitation among females to attend medical centers. But the gender ratio among HIV positive patients was 1.5:1, close to national survey of 2:1 ratio.¹³ This discrepancy among men attending HTC clinics versus HIV positive men, is perhaps because of above mentioned reasons.

National HIV testing and treatment guidelines 2017 states that reason for testing in facility can be provider initiated or client initiated.³ In this study, various reasons for testing included provider initiated and client initiated tests. Commonest reason for testing was STI (41.1%), among which genital verruca was the most common diagnosis, consistent with previous study at our center.¹⁴ However, Garg et al reported syphilis as commonest STI in Eastern Nepal.⁸ In current study, gram positive gonococcal infection was seen in 11.5% of STI and 3.4% had chlamydia. Prevalence of gonorrhoea is higher in our study compared to previous report of 1.0% in population based study in rural Nepal, but results of chlamydia is comparable (2.3%). However, current trends in South-East Asia and

globally shows decline in syphilis and gonorrhea, with increase in Chlamydia.^{6,7}

Majority of clients were labor migrants, drivers and laborers, similar to previous studies.^{8,14} We did not have high risk people such as FSW and IVDA in our study, which perhaps reflects the gap in accessibility of HTC services among high risk population. Previous study done in three districts of Nepal showed that 54% of FSW and 45% of MSM/TG did not utilize HTC services.¹⁵ Another study in 22 Terai districts, showed substantial decline in FSW visiting HTC services in 2017 compared to 2012.¹⁶ This is worrisome. National HIV testing guideline emphasizes the importance of community based testing in high risk population.³ But the gap between guidelines and results call for targeted interventions to address risk behaviors, awareness and attitude towards HIV and psychosocial impact of HIV testing in high risk population urgently.

Likewise, tuberculosis is established as high risk factor for acquiring HIV. HIV and TB is a deadly “syndemic”.¹⁷ Tuberculosis patients are 19 times more likely to be infected with HIV than those without TB, and HIV patients are 26 times more likely to develop TB than healthy individuals.¹⁸ Among 33.4 million people living with HIV in 2008, nearly 30% were estimated to have latent or active TB infection and tuberculosis is the leading cause of death among HIV patients. Globally in 2014, 51% of TB patients (3.2 million) had a documented HIV test.^{17,18} Our National HIV Testing Guidelines of Nepal clearly states the need for HIV screening in all TB patients.³ However, in our study, only small fraction of clients referred for HTC had TB (2.5%). Actual TB patients attending our tertiary care center is much higher. This is just a tip of an iceberg. But despite very low referrals, 80% of HIV positive patients (4/5) in our study were known case of tuberculosis. This finding is striking but might not reflect actual burden due to low number of referral cases of TB. In Eastern

India, differing from our study, 12.3% of tuberculosis patients were HIV positive.¹⁹

This prompted us to analyze discrepancy between recommendations and actual fraction of TB patients receiving HTC in Nepal. Incidence of TB is increasing in recent years and more than 90% of global TB cases and deaths occur in developing world.²⁰ Another study describes caseload of tuberculosis in South-East Asia as “staggering”.²¹ In this scenario, it is dubious that the syndemic is reported in only 3.5% in South-East Asia while TB/HIV co-infection is 12.5% globally. This raises a pertinent question regarding total case burden of this syndemic. In 2015, almost 60% of TB cases among HIV patients were not diagnosed according to WHO.¹⁸ Amid this huge gap, WHO has set ambitious target of “90-90-90” by 2020, i.e. 90% HIV patients know their sero-status by 2020. We would like to put forward that one of the measures needed to achieve this ambitious target is to routinely screen all tuberculosis patients for HIV.

Our study is conducted in a tertiary care center. It might not reflect burden in the community. Moreover, asymptomatic carriers who do not seek medical care were missed.

Conclusion

It is essential to measure the regional prevalence of STI in Nepal to be able to estimate impact sexual health and HIV. Gonorrhea and chlamydia are underdiagnosed in Nepal. This calls for better laboratory facilities across Nepal, to prevent complications and resistance of these disease with huge global burden. The take home message of this study is that every patient with TB should routinely be screened for HIV, in accordance with National HIV testing guidelines.

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