Detection of pharyngeal and rectal gonorrhea and chlamydia is more common than genital infections with Xpert® CTNG in a sexual health clinic

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OVERVIEW:

In our clinic, rectal and pharyngeal sites are most likely to be positive for gonorrhea and chlamydia as tested by the Xpert® CTNG system. Testing urine yielded the least positive samples. This discrepancy is almost certainly due to the sexual history described by our patients with MSM being the group that predominates in positive pharyngeal and rectal samples, multiple contacts of both unprotected oral and anal sex being commonly reported, whereas the majority of genital testing is performed in MSW following a single oral contact.

BACKGROUND:

- ① Reduced sensitivity of NAAT testing at extragenital sites:**
NAAT testing is the preferred and recommended technique for gonorrhea and chlamydia detection in extragenital sites (pharynx and rectum). Detection is superior to other techniques, such as culture, but is inferior to the same tests performed in genital samples.¹⁻⁴
- ② Xpert® CTNG in extragenital sites:**
Although acceptable sensitivity has been shown in the detection of gonorrhea and chlamydia using the NAAT system called Xpert® CTNG, it has been shown to somewhat inferior to other systems but with excellent specificity.⁵⁻⁷
- ③ NAAT testing at Open House:**
Since the Xpert® CTNG system is our primary NAAT diagnostic tool at Open House Medical Centre, we were interested in reviewing data to date regarding the test's performance.

METHODS:

We reviewed all the Xpert® CTNG tests performed over a 14-month period (2016 to 2017) in asymptomatic patients. The percentage of positive results for gonorrhea and chlamydia were determined for urine, rectal and pharyngeal samples and the sexual practices of these clients were recorded.

Results: TOTAL TESTS

Total number of CTNG tests performed at each anatomical site in asymptomatic patients

Results: PHARYNGEAL

500 pharyngeal screening tests performed

■ Negative ■ Positive

% positive results in CTNG tests performed in pharyngeal samples

■ Chlamydia ■ Gonorrhea

Distribution of gonorrhea and chlamydia in positive pharyngeal tests (no.)

■ MSM ■ MSW ■ WSM

Sexuality (%) of positive pharyngeal gonorrhea or chlamydia tests

■ Single oral contact ■ Multiple oral contacts

Distribution (%) of sexual contacts in positive pharyngeal CTNG test

PHARYNGEAL: Key messages:

1 in 12 CTNG screening tests is positive in pharyngeal samples.
Positive results are seen predominantly in MSM and in multiple oral contacts.

Results: URINE

1483 screening tests performed in urine

■ Negative ■ Positive

% positive results in CTNG tests performed in urine in asymptomatic patients

■ Chlamydia ■ Gonorrhea

Distribution of gonorrhea and chlamydia in positive screening tests in urine (no.)

■ MSM ■ MSW

Sexuality of positive gonorrhea or chlamydia screening tests in urine

■ MSW single oral contact
■ MSW multiple oral contacts
■ MSW with vaginal/anal component
■ MSM

URINE key messages:

Very few cases of asymptomatic urethral gonorrhea and chlamydia detected
When it occurs, it is predominantly in heterosexual men
The low incidence of cases is probably due to the fact that MSW who attend our clinic are more likely to have had one single contact of oral sex rather than penetration of multiple contacts

Results: RECTAL

105 rectal screening tests performed

■ Negative ■ Positive

% positive results in CTNG tests performed in rectal samples

Sexuality (%) of positive rectal gonorrhea or chlamydia tests

Distribution of gonorrhea and chlamydia positive in rectal tests (no.)

■ Single anal contact ■ Multiple anal contacts

Distribution (%) of sexual contacts in positive rectal CTNG screening test

RECTAL: Key messages:

1 in 12 CTNG screening tests is positive in the rectum of MSM predominantly following multiple anal contacts.

SUMMARY:

The use of Xpert® CTNG in our centre provides a speedy point-of-care NAAT tool:
- for detection of gonorrhea and chlamydia at all anatomical sites in asymptomatic patients
- with apparently robust detection of these infections at extragenital sites as a result of patients experiencing multiple sexual unprotected contacts
- with an extremely low detection levels of asymptomatic gonorrhea and chlamydia in urine as a consequence of screening the “worried well” rather than an at-risk population

Copies and further information: www.openhouse.es

References:

1. Ota KV et al. Detection of Neisseria gonorrhoeae and Chlamydia trachomatis in pharyngeal and rectal specimens using the BD Probeset ET system: the Gen-Probe Aptima Combo 2 assay and culture. Sex Transm Infect 2009; 85: 182–186.
2. Schachter J et al. Nucleic acid amplification tests in the diagnosis of chlamydial and gonococcal infections of the oropharynx and rectum in men who have sex with men. Sex Transm Dis 2008; 35: 637–642.
3. Bachmann LH et al. Nucleic acid amplification tests for diagnosis of Neisseria gonorrhoeae and Chlamydia trachomatis rectal infections. J Clin Microbiol 2010; 48: 1827–1832.
4. 2015 UK national guideline for the management of infection with Chlamydia trachomatis Nneka C Nwokolo et al International Journal of STD & AIDS 2016, Vol. 27(4) 251–267
5. R Geiger et al Validation of the GeneXpert® CT/NG Assay for use with Male Pharyngeal and Rectal Swabs Austin J HIV AIDS Res. 2016; 3(1): 1021.
6. Bristow CC et al Comparative Evaluation of 2 Nucleic Acid Amplification Tests for the Detection of Chlamydia trachomatis and Neisseria gonorrhoeae at Extragenital Sites. Sex Transm Dis. 2017 Jul;44(7):398-400
7. Cosentino LA et al Use of Nucleic Acid Amplification Testing for Diagnosis of Extragenital Sexually Transmitted Infections. J Clin Microbiol. 2017 Sep;55(9):2801-2807