IMPACT OF NEAR-TO-PATIENT STI TESTING ON CLINICAL PRACTICE: THE NEPTUNE STUDY

Authors:
Vodstrcil LA[1,2,3], Htaik K[2], Plummer EL[1,2], De Petra V[4], Sen MG[4], Williamson DA[5,6], Ong JJ[1,2], Fairley CK[1,2], Wu J[2], Owlad M[2], Murray GL[7,8,9], Chow EPF[1,2,3], Bradshaw CS[1,2,3]

[1] Central Clinical School, Monash University, Melbourne, Victoria, Australia
[2] Melbourne Sexual Health Centre, Alfred Health, Melbourne, Victoria, Australia
[3] Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Victoria, Australia
[4] Microbiological Diagnostic Unit Public Health Laboratory, Department of Microbiology and Immunology, The Peter Doherty Institute for Infection and Immunity at The University of Melbourne, Melbourne, Victoria, Australia.
[5]Department of Microbiology, Royal Melbourne Hospital, Melbourne, Australia
[6]Victorian Infectious Diseases Reference Laboratory, The Peter Doherty Institute for Infection and Immunity, Melbourne, VIC, Australia
[7]Murdoch Children's Research Institute, Parkville, Victoria, Australia
[8]Women's Centre for Infectious Diseases, The Royal Women's Hospital, Parkville, Victoria, Australia
[9]Department of Obstetrics and Gynaecology, The University of Melbourne, Parkville, Victoria, Australia

Background:
Presumptive treatment leads to antibiotic overuse and misuse in STI syndromes and sexual contact of STIs. Furthermore, STIs like *Mycoplasma genitalium* (MG) have acquired such high levels of antibiotic resistance that resistance testing is required to guide care. We aimed to determine if near-to-patient-testing for *Neisseria gonorroheae* (NG), *Chlamydia trachomatis* (CT) and MG (plus macrolide-resistance-mutation) would improve appropriate prescribing and reduce antibiotic overuse in patients with non-gonococcal urethritis (NGU), suspected proctitis and pelvic inflammatory disease(PID), STI-contacts of the three STIs, and in patients attending for MG test-of-cure(TOC). Assay performance and timely STI-specific partner notification were also measured.

Methods:
From March-December 2021, enrolled patients attending MSHC underwent standard STI testing by transcription-mediated amplification (Aptima, Hologic) and PCR (MGResistancePlus, SpeeDx) and near-to-patient-testing using the GeneXpert system (Cepheid). We calculated the proportion with an STI detected among those who presented 1) with an STI syndrome, 2) as an STI-contact, or 3) for MG-TOC. Patients with an STI were sent an SMS the following day asking how many sexual partners they notified.

Results:
870 patients were recruited (representing 975 consults). Using near-to-patient-testing, an STI was detected in 63/252 (25.0%) with NGU (12.3% CT;2.8%

NG;11.3% MG), 18/51 (35.3%) with proctitis (9.8% CT;21.6% NG;11.8% MG) and 5/51 (9.8%) with pelvic pain (2.0% CT;2.0% NG;5.8% MG). Of 527 STI-contacts, only 34.7% had an STI detected by near-to-patient-testing. MG was detected in 35/161 (21.7%) MG-TOC presentations. 173/276 with an STI detected reported partner-notification via SMS; 95.4% notified all/some sexual partners and 85.9% of these notifications occurred <24h of receiving the STI result.

Conclusion:
Bacterial STIs were detected in fewer than a third of patients with STI syndromes or STI contacts, highlighting how presumptive treatment leads to antibiotic overuse and the need for timely aetiologic treatment strategies. Near-to-patient-testing resulted in rapid and high rates of STI specific partner-notification.

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