

## LETTER TO THE EDITOR

# Polymerase chain reaction assay in acute urethritis

To Editor,

Acute urethritis is the most common sexually transmitted disease in men. The literature shows a significant development in diagnosis and treatment methods for the disease in recent years. The biggest development is undoubtedly the widespread use of nucleic acid amplification tests such as polymerase chain reaction (PCR) assay. The PCR assay has provided detection of urethritis pathogens that are difficult to identify, both immediately and with high sensitivity. This development has raised four issues: First, "classical" empiric treatment approaches for urethritis are now discouraged (Bartoletti et al., 2018). As is known, empiric treatment approaches cause the development of resistant strains. Second, the identification of a large number of pathogens in a single sample using multiplex PCR has made the presence of polymicrobial infection in urethritis a current issue. In a recent urethritis study, the prevalence of polymicrobial urethritis was found to be remarkable at 16.9% (Sarier, 2019). Clinicians should consider polymicrobial infection especially in persistent infections. Third is an update of the classification of nongonococcal urethritis pathogens. Results of a review published regarding the classification of nongonococcal urethritis pathogens are valuable (Sarier & Kukul, 2019). The review highlighted that *Mycoplasma hominis* and *Gardnerella vaginalis*, which may be found in the urethral flora in commensal structures, should especially be considered as urethritis pathogens with a high microbial load. In addition, it is seen that unlike *Ureaplasma urealyticum*, there is no place to evaluate *Ureaplasma parvum* as a urethritis pathogen in line with the evidence. Finally, widespread use of PCR assays has raised questions about the place of microscopy of a urethral Gram stain smear (GSS) in the diagnosis of nongonococcal urethritis. GSS still protects its validity in the diagnosis of acute urethritis because it is inexpensive and easy to perform. However, the sensitivity of five PMNL/HPF (polymorphonuclear leucocytes per high-power field) as a "classical" cut-off in GSS is quite controversial for the diagnosis of low-inflammation nongonococcal urethritis (Rietmeijer & Mettenbrink, 2012; Sarier et al., 2018). Therefore, the Centres for Disease Control and Prevention (CDC) dropped the cut-off value to  $\geq 2$  PMNL/HPF

in its 2015 *Sexually Transmitted Disease (STD) Treatment Guidelines* (Workowski & Bolan, 2015). Today GSS is still a recommended first line investigation for confirming the presence of urethritis (Sheldon, 2018). Although the use of PCR based on result of GSS is questionable because of its costs, given the abovementioned issues, it is seen to be cost-effective.

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## REFERENCES

- Bartoletti, R., Wagenlehner, F. M. E., Bjerklund Johansen, T. E., Köves, B., Cai, T., Tandogdu, Z., & Bonkat, G. (2018). Management of urethritis: is it still the time for empirical antibiotic treatments? *European Urology Focus*, 5(1), 29–35. <https://doi.org/10.1016/j.euf.2018.10.006>
- Rietmeijer, C. A., & Mettenbrink, C. J. (2012). Recalibrating the Gram stain diagnosis of male urethritis in the era of nucleic acid amplification testing. *Sexually Transmitted Diseases*, 39(1), 18–20. <https://doi.org/10.1097/OLQ.0b013e3182354da3>
- Sarier, M. (2019). Prevalence of polymicrobial infection in urethritis. *Journal of Urological Surgery*. <https://doi.org/10.4274/jus.galenos.2019.2405>
- Sarier, M., & Kukul, E. (2019). Classification of non-gonococcal urethritis: A review. *International Urology and Nephrology*, 51(6), 901–907. <https://doi.org/10.1007/s11255-019-02140-2>
- Sarier, M., Sepin, N., Duman, I., Demir, M., Hizel, A., Göktaş, Ş., ... Soylu, A. (2018). Microscopy of Gram-stained urethral smear in the diagnosis of urethritis: Which threshold value should be selected? *Andrologia*, 50(10), e13143. <https://doi.org/10.1111/and.13143>
- Sheldon, M. (2018) Urethritis. In: *BMJ Best Practices* [Internet]. London: BMJ Publ. Group. Retrieved from <https://bestpractice.bmj.com/topics/en-gb/54/investigations>
- Workowski, K. A., & Bolan, G. A. (2015). Sexually transmitted diseases treatment guidelines. *Morbidity and Mortality Weekly Report (MMWR)*, 64, 1–137. <https://doi.org/10.1097/00008480-200308000-00006>