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Poster Session VI
Molecular diagnosis of sexually-transmitted pathogens

DIAGNOSTICS OF NEISSERIA GONORRHOEAE IN OROPHARYNGEAL SAMPLES: WHAT IS THE CLINICAL RELEVANCE OF DETECTION OF VERY LOW GONORRHOEAL CONCENTRATIONS IN THESE SAMPLES?

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Objectives: No current test for the diagnosis of Neisseria gonorrhoeae (NG) is validated for detection in oropharyngeal samples in contrast to detection in urogenital samples. Nonetheless, these tests are employed to diagnose NG (mainly in high risk groups such as men who have sex with men) in these samples by lack of a better alternative (Schachter et al., STD, 2008). The objective of this study was to analyse real-time PCR data for detection of NG in oropharyngeal samples.

Methods: All oropharyngeal samples obtained by the STI clinic South Limburg, the Netherlands between January and September 2013 were included in this study. Samples were tested for the presence of NG by COBAS 4800 (Roche Diagnostics), a NG dual-target commercial real-time PCR assay. On a selected group of samples, an in-house NG qPCR assay was applied as well (Hopkins et al., STI, 2010).

Results: In total 1409 oropharyngeal samples were included in this study of which 66 were found to be NG positive. In 48 of 66 samples, the oropharyngeal swab was the only sample which tested positive in the patient (urogenital and anorectal samples remained negative). The observed PCR Ct values varied between Ct 27- 41, however nearly 70% of these samples had a Ct value higher than 35. Results were confirmed by in-house PCR on a random selection of the samples. This study included samples from 4 patients, who were part of a larger clinical study for which oropharyngeal samples were taken during a screening visit as well as prior to treatment. The NG Ct values on their initial visit were high (Ct 35-39) but remained detectable upon testing of the follow-up sample (Ct 36-39).

Conclusions: Hardly any studies have been performed on the detection of NG in oropharyngeal samples and no studies in this area have looked at the bacterial NG load. This study indicates that the bacterial NG load in the majority of oropharyngeal samples is low and furthermore, in most patients, this is the only NG positive sample found. This raises the question what the clinical importance is of NG in these samples. Pilot data of 4 cases showed that in spite of the low NG load, all 4 cases remain positive upon retesting. This may suggest that the results may indeed reflect clinically relevant infections. As these samples were positive for three NG specific targets, false-positive detection due to other Neisseria species seems unlikely. Future work will focus on inclusion of more cases of who multiple oropharyngeal samples are collected.