27th ECCMID Vienna, Austria 22 – 25 April 2017
The congress of ESCMID

Session: P090 Sexually transmitted infections

Category: 2d. Abdominal/gastrointestinal, urinary tract & genital infections

25 April 2017, 12:30 - 13:30
P1869

Rapid molecular diagnosis of Chlamydia trachomatis and Neisseria gonorrhoeae infections in women with pelvic inflammatory disease suspicion

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Background

Although pelvic inflammatory disease (PID) frequently has a polymicrobian origin, *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) are the most common microorganisms involved in this infection. PID can produce a wide range of symptoms, from asymptomatic to a very severe disease. It represents a challenge for clinicians due to the difficult etiologic diagnosis and the unspecific symptoms.

Molecular detection of CT/NG could help in the diagnosis and correct management of patients with PID, avoiding misdiagnosis and its short and long-term consequences. The objective of this study was to evaluate the clinical use of CT/NG molecular detection in patients affected by well-defined PID or suspected PID because of unspecific abdominal pain.

Materials/methods

From April 2015 to September 2016, 47 women with clinical criteria for mild, moderate or severe PID and women referred for unspecific pelvic or lower abdominal pain were included in the study. Endocervical swabs, urine and surgical intra-operative samples (patients with tubo-ovarian abscess or purulent secretion) were collected.

GeneXpert® CT/NG assay (Cepheid) and amplification with Anyplex™ CT/NG Real-time Detection (Seegene) after extraction with Biorobot EZ1® (Quiagen) were performed. Patients were managed and treated according to the guideline of the Gynaecological Unit. Follow-up control was scheduled one month after the diagnosis of PID and tests for CT/NG were performed again to all those patients with previous positive results.

Results

A total of 111 samples from 47 patients were analysed. Median age was 32 years (21-56). Abdominal pain was accompanied with other symptoms (local symptoms, fever and/or general symptoms) in most cases (41/47, 87.2%).

A total of 22 (19.8%) samples from 11 (23.4%) patients were positive for CT or NG. GeneXpert® CT/NG assay and Anyplex™ CT/NG Real-time showed a 100% concordance. There were 7 (14.9%) cases of CT infection (seven endocervical swabs, seven urines and one abdominal lavage) and 4 (8.5%) of NG infection (four endocervical swabs and three urines). Four of these patients were controlled in the followed month, all of them with negative results.

Conclusions

Almost 25% of the patients with pelvic inflammatory disease suspicion or unspecific abdominal pain suffered from an infection by CT or NG. Urine sample was not successful to detect NG in one case. GeneXpert® CT/NG assay provided quick results (90 minutes) with minimal manipulation of the sample.