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Detection of *Chlamydia trachomatis*, *Neisseria gonorrhoeae* and *Ureaplasma urealyticum* in symptomatic and asymptomatic subjects

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Dear Editor,
The prevalence of urogenital sexually transmitted pathogens like Neisseria gonorrhoeae (NG), Chlamydia trachomatis (CT), and *Ureaplasma urealyticum* (UU) varies widely in different countries [1-3].
We retrospectively studied the prevalence of NG, CT, and UU and the associated clinical manifestations in the patients who visited the sexually transmitted infections (STI) outpatient clinic of the Policlinic San Martino Hospital (Genoa, Italy) between January 1st, 2020, and December 30th, 2023. We performed a urogenital swab for the simultaneous detection of NG, CT and UU through a multiplex polymerase chain reaction (PCR) assay in 847 adult subjects (557 males, 290 females). Unlike another recent research that included only symptomatic patients [1], we also included asymptomatic individuals who contacted our STIs outpatient clinic to perform screening tests after risky sexual intercourse. The average age in our series was 44±13.56 years and most of the patients we included were males (66% of all the subjects) [1].
The infection rate of CT in our cohort (51/847, 6.0%) was very similar to that described in a recent Chinese study (145/2186, 6.6%) as well as the higher CT prevalence in males than in females [1]. Noteworthy, 55% of the CT-infected patients in our cohort were utterly asymptomatic and only 45% of CT-infected patients complained of symptoms like vaginal/urethral discharge and dysuria. The infection rate of NG and UU in our series (1.1% and 10%, respectively) was lower than that described in China (4.5% and 48%) [1]; in both reports, NG was more common in men, while UU was dominant in females in the Chinese cohort. The different rates of these infections among the two studies could be related to the fact that a considerable portion of our patients were asymptomatic (30% of NG-infected and 57% of UU-infected). In contrast, in Liu's study, only patients with urogenital symptoms were included, therefore having a high probability of being carriers of infec-

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tion [1]. These data may also reflect different socio-economic backgrounds, antimicrobial use policies and lifestyles between different countries [1]. Co-infections were rarely reported in our cohort (1.7%), unlike in the patients studied by Liu *et al.* in China (10.9%) [1]; however, the most frequent co-infection pattern (CT+UU) was the same, in line with other Chinese [2] and European studies [3]. The detection of pathogens like Ureaplasmas in association with CT deserves attention: it was demonstrated that *Ureaplasma parvum* (UP) can favor the persistence of CT in immortalized epithelial cell lines (HeLa cells) by inhibiting the action of interferon-γ and promoting the establishment of a chronic CT infection [4].

The considerable number of asymptomatic infected patients in our series highlights the importance of STI screening, especially in high-risk populations, such as patients attending the STI centers [5-9]. Our data suggests that an STI urogenital screening based only on the presence of symptoms may determine an underestimation of the true prevalence of STIs and may generate a false sense of safety in asymptomatic individuals, favoring the spread of infections and possibly their progression toward severe complications.

Authors contributions

GC and FD conceived the study; AH, CF, and MP collected and elaborated the data; IS and GS wrote the first draft; GC, SV, FB and FD revised the manuscript.

Conflict of interest

None.

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None to declare.

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