

DIAGNOSTIC APPROACH TO GONOCOCCAL INFECTION IN RUSSIA: A MULTICENTER RETROSPECTIVE STUDY

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BACKGROUND

Gonorrhea is one of the most commonly reported bacterial sexually transmitted diseases (STDs). WHO estimates that 62 million cases of gonorrhea occur annually worldwide. According to official statistics the prevalence of infection is 27.34 cases per 100,000 population in Russia, although it is suspected to be underestimated. Prompt and effective diagnosis of gonococcal infection is an essential component of its control. The gold standard for the detection of *Neisseria gonorrhoeae* is the culture, which has high sensitivity and specificity. Other options include microscopy and nucleic acid amplification tests (polymerase chain reaction, etc.). We aimed to reveal real practice of diagnostics of uncomplicated gonorrhea throughout Russia.

In 83.2% of patients gonorrhea was diagnosed and treated in out-patient settings, in 12.6% – in in-patient settings, whereas for 4.2% we have no information regarding place of management.

The most common method to diagnose gonococcal infection was methylene blue stain and/or Gram's stain microscopy – 82.5% (99.2% of men and 98.2% of women). Moreover, for 80.7% of patients (82% of men and 67.3% of women) it was the only test performed.

Although culture test was done in 16.1% of patients (16.5% of men and 32.7% of women), susceptibility testing was performed only in 1.9% of cases. Polymerase chain reaction was used in 1.3% of cases as an additional method. In 4 patients (1.3%) the diagnosis was based only on clinical findings.

The combinations of tests used for diagnostics of gonococcal infection in male and female patients are presented at **Figures 2 and 3**.

So instead of gold standard culture test the first and the only method to diagnose gonococcal infection in the majority of patients was microscopy which is more or less acceptable for symptomatic men, but insufficient for other categories of patients especially in detecting of *N. gonorrhoeae* in endocervical, pharyngeal, or rectal specimens. Common use of microscopy as a single method to diagnose gonococcal infection leads to considerable underestimation of gonorrhea prevalence in Russia. General introduction of conventional and reliable tests such as culture and nucleic acid amplification tests in routine clinical practice is essential for the improvement of case-finding and, thus, efficient disease management in our country.

METHODS

A multicenter retrospective study (BaSTlon Project) was conducted in 10 different cities of Russia:



► Figure 1. T. BaSTlon Project geography.

Ekaterinburg, Krasnodar, Krasnoyarsk, Moscow, Smolensk, St. Petersburg, Stavropol, Tyumen, Vladivostok, Yakutsk (**Fig. 1**).

Randomly selected clinical records of adult patients treated for uncomplicated gonococcal infection of lower urogenital tract during the period since January 2007 till December 2007 were collected. All data were analyzed by means of descriptive statistics.

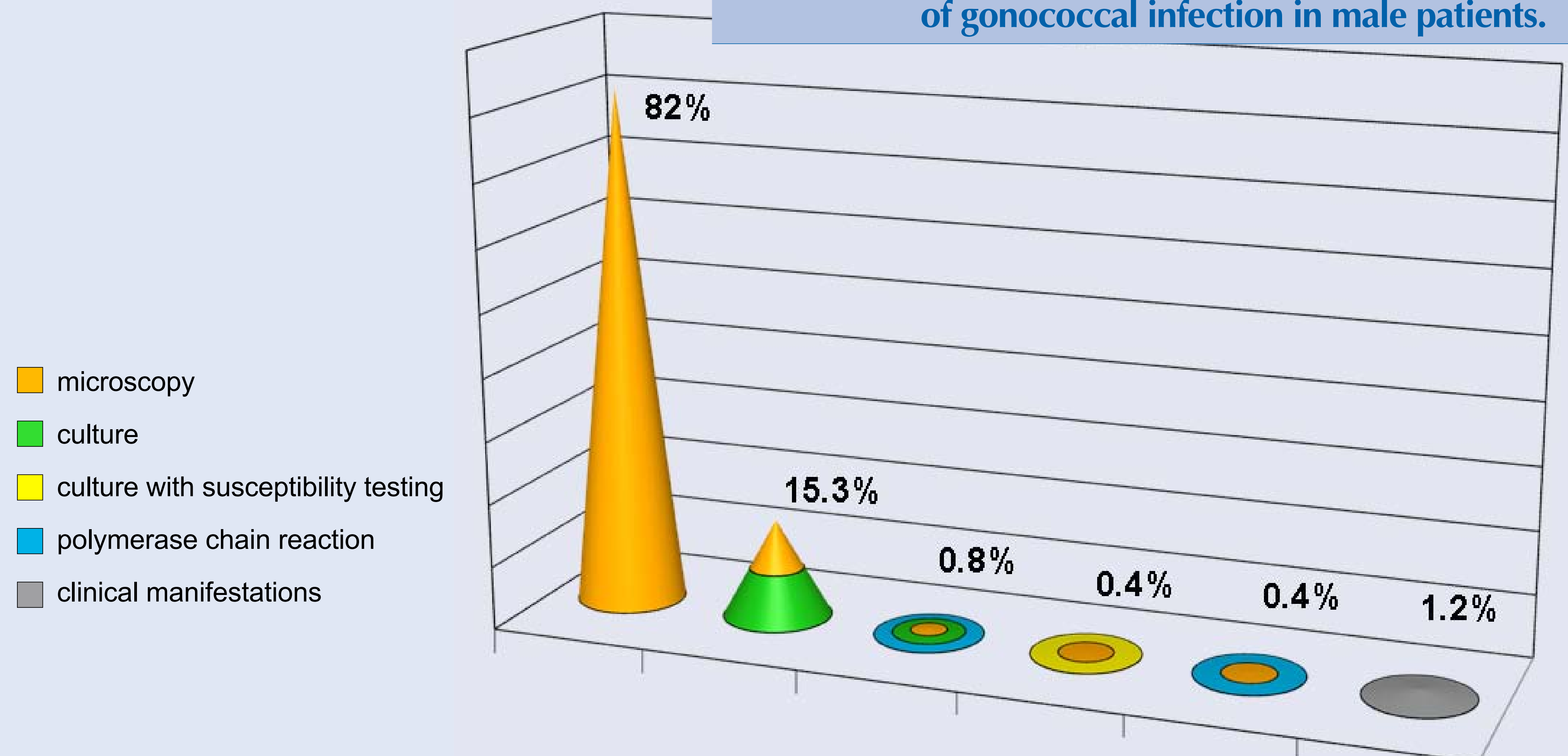
RESULTS

The data of 310 patients (82.3% men, 17.7% women) aged from 15 to 57 years (mean age 26 ± 7.5) were included in the final analysis. The majority of patients (86.2%) had acute, 5.4% – chronic, 5.1% – subacute, 3% – torpid and 0.3% – latent gonococcal infection.

CONCLUSIONS

1. Gram stained microscopy remains the most common method to diagnose gonococcal infection in Russia.
2. Diagnostics of gonococcal infection in our country is inadequate in the majority of female patients and in some male patients.
3. Common use of microscopy as a single method to diagnose gonococcal infection leads to considerable underestimation of gonorrhea prevalence in our country.

► Figure 2. Combinations of tests used for diagnostics of gonococcal infection in male patients.



► Figure 3. Combinations of tests used for diagnostics of gonococcal infection in female patients.

