

Neisseria gonorrhoeae (NG) Infection in MSM: Clinical and Microbiological Characteristics. Culture is Essential but Provides Limited Assistance

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BACKGROUND

- In Spain, NG infection is the most frequent Sexual Transmitted Infection (STI) among Men who have Sex with Men (MSM) ¹.
- For 2022, 70,881 confirmed cases of NG were reported in 28 EU/European Economic Area countries, with a crude notification rate of 17.9 cases per 100,000 population, representing a 48% increase compared with 2021 and an 59% increase compared with 2018 ².
- Its clinical relevance is questioned in some scenarios, even suggesting the unnecessary screening of asymptomatic individuals ³.
- Although when left untreated, NG may lead to severe consequences, we also know that spontaneous clearance of asymptomatic NG does occur, but data are scarce ⁴.
- There are still many questions to answer about NG...

OBJECTIVE

- The objective of our study is to analyze the characteristics of NG infection in a cohort of MSM who undergo regular STI screening.

RESULTS

- NG infections with **positive PCR** assay: **362**
- **Cultures** performed in **349 episodes** occurring in **289 MSM**.
- Baseline characteristics of patients and episodes are described in table 1.
- Most episodes were asymptomatic (80.6%) and nearly 1 out of 4 had another concurrent STI.
- In 41 episodes, subjects were on doxycycline post-exposure prophylaxis (Doxy PEP).
- **Negative cultures: 281 cases (80.5%).**
- **Positive cultures: 68 cases (19.5%).**
- Frequency of positive cultures by location are described in table 2.
- Positive cultures were not associated with symptoms, HIV infection, Doxy PEP status, or concurrent STIs.
- All isolates were sensitive to ceftriaxone, and 55.2% to tetracycline.
- No seroconversions occurred in subjects on PrEP during this period.

PATIENTS AND METHODS

- **Study design:** retrospective and uncenter study (HVV in Málaga, Spain).
- **Population:** our cohort of subjects on Pre-Exposure Prophylaxis to HIV (PrEP) and Persons Living with HIV (PLHIV) at risk of STIs, undergoing periodic screening (every 3-6 months).
- **Patients included:** all diagnosed with NG infection. Cases without a culture were excluded.
- **Period of study:** from October 2023 to June 2024.
- **Methods for STI screening:**
 - ✓ **Samples:** two swabs from each site (pharyngeal, rectal) and urethral if symptomatic urethritis or one sample of urine when asymptomatic.
 - ✓ **Microbiological processing:** Amies transport medium (*Deltalab*®) and Martin-Lewis agar inoculation.
 - ✓ **NG identification:** Malditof system.
 - ✓ **Susceptibility testing:** E-test strips following EUCAST recommendations.
 - ✓ **Real-time PCR:** automated Cobas 4800 system (Roche).
- **Variables:** Epidemiological and clinical characteristics were collected.
- **Statistic program:** SPSS 25.0

Table 1: Baseline characteristics of patients and episodes

MSM	289 (100%)
On PrEP	215 (74.4%)
PLHIV	65 (22.5%)
Other	9 (3,1%)
Mean age (±SD)	37.8 (9.9)
Asymptomatic	233 (80.6%)
Concurrent STI	65 (22.5%)
Chlamydia	44 (15.2%)
Syphilis	17 (5.9%)
On DOXY PEP	41 (14.2%)

Table 2: Comparison cultures by site

	Rectal*	Pharyngeal	Urethral**
Positive	56	1	11
Negative	162	101	18
Total	218	102	29

* p<0.001 rectal vs pharyngeal

** p<0.0001 urethral vs pharyngeal

CONCLUSIONS

- ❖ Most NG infections in MSM are asymptomatic
- ❖ Culture sensitivity is low in this context, with higher recovery rates in rectal and urethral samples
- ❖ All isolates were sensitive to ceftriaxone, and half to tetracyclines
- ❖ The transmissibility of a positive PCR assay but culture-negative result, especially pharyngeal, should be investigated

References

1. Vigilancia epidemiológica de las infecciones de transmisión sexual en España, 2023. Madrid octubre 2024
2. European Centre for Disease Prevention and Control. Gonorrhoea. In: ECDC. Annual epidemiological report for 2022. Stockholm: ECDC; 2024
3. Kenyon C, et al Management of asymptomatic sexually transmitted infections in Europe towards a differentiated evidence based approach. Lancet Health Reg Eur 2023
4. Teker B, et al. Spontaneous clearance of asymptomatic anogenital and pharyngeal NG: a secondary analysis from the NABOGO trial. Sex Transm Infect 2023