Prevalence of *Mycoplasma genitalium* in France and comparison with *Chlamydia trachomatis* and *Neisseria gonorrhoeae* as determined by the *Mycoplasma genitalium* TMA assay

A. Ebel, C. Venard, D. Brunengo, S. Merlin (Biomnis Laboratory , Ivry sur Seine, France)

BACKGROUND

Mycoplasma genitalium (MG) causes nongonococcal urethritis in men and has been associated with endometritis and cervicitis in women. *Mycoplasma genitalium* is described to be frequently associated with *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG). Nucleic acid amplification tests (NAATs) are the tests of choice for the diagnosis of genital infection, because of their high sensitivity and suitability for various types of samples. In France, limited data on prevalence of MG in the general population as well as in high-risk populations exist.

OBJECTIVE

We determined MG together with CT and NG prevalence, in men and women with or without symptoms of sexually transmitted infections (STI), undergoing CT and NG screening in France, using Aptima® assays for MG, CT and NG (Hologic, Inc., USA).

MATERIAL

Patient samples were tested for MG infections using an Aptima MGEN RUO (research use only) assay, for CT and NG infections using the APTIMA COMBO 2 assay for CT and NG (AC2) on the TIGRIS DTS system, respectively. AC2 is a target amplification nucleic acid probe test, based on Target Capture extraction and transcription-mediated amplification (TMA), targeting ribosomal RNA from CT and NG. The MGEN RUO assay utilizes the same technology as the AC2, targeting MG specific rRNA and can be performed on the same specimen used for AC2 testing. All materials were used according to the instructions of the manufacturer.

Figure 1: Tigris DTS system

METHODS

A total of 2201 consecutive specimens from women, 785 from men and 16 from unknown sex, were sent to the Biomnis Reference Lab (Paris, France) for CT and NG testing.

We analysed all 3002 clinical samples (1015 first-void urines, 877 vaginal swabs, 677 cervical swabs, 175 urethral swabs and 258 samples from other origins), prospectively collected from 2 to 14 January 2015. All samples were collected in dedicated Aptima collection kits.

RESULTS

PATIENTS

- Mean age: 32.7 yrs
- Age Range: 12-90 yrs
- Sex ratio M/F: 0.35
- 18.5% of samples provided from Ile De France (IDF)

Prevalence	All N (%)	Women N (%)	Men N (%)
MG	112 (3.7)	71 (3.2)	39 (5.0)
CT	221 (7.4)	155 (7.0)	65 (8.3)
NG	51 (1.7)	16 (0.7)	35 (4.5)

Table 1: Overall MG, CT and NG prevalence

- MG, CT and NG prevalence in women was 3.2%, 7.0% and 0.7%, respectively
- MG, CT and NG prevalence in men was 5.0%, 8.3% and 4.5%, respectively.
- 3 co-infections with CT/NG/MG, 20 co-infections with CT/MG and 5 with NG/MG

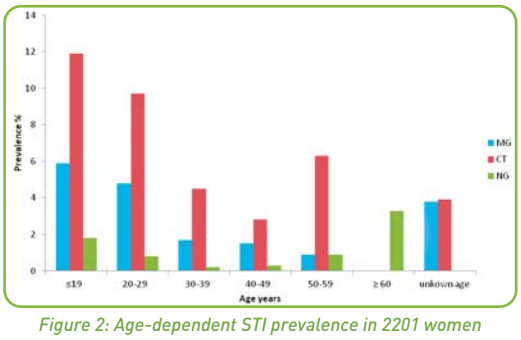

Figure 2: Age-dependent STI prevalence in 2201 women

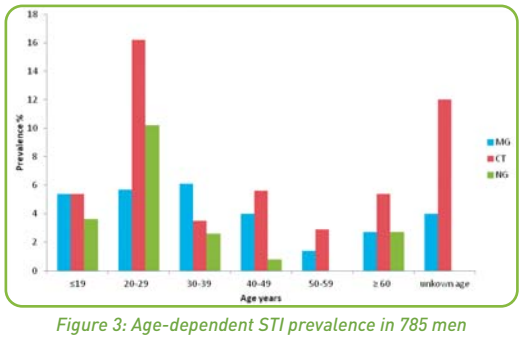

Figure 3: Age-dependent STI prevalence in 785 men

- Highest prevalence was in the ≤ 19 years age range for women and 20-29 years age range for men for all MG, CT and NG infections

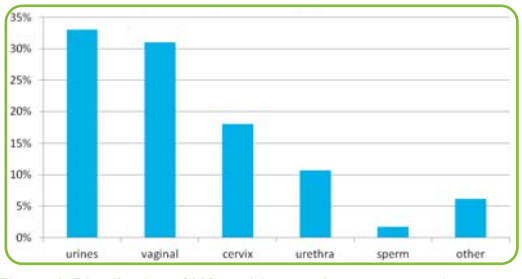

Figure 4: Distribution of MG positive results across specimen types

- MG mostly recovered from first void urines and vaginal swabs as previously reported. This is partly influenced by the fact that the most samples came from those 2 sample types

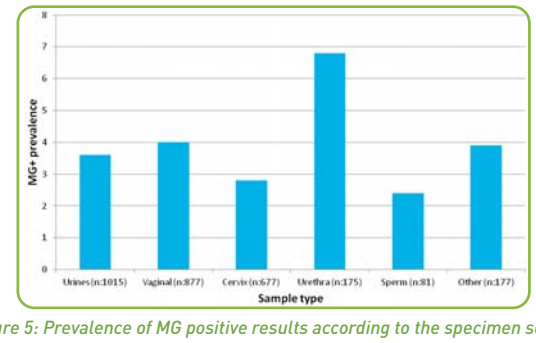

Figure 5: Prevalence of MG positive results according to the specimen source

- In our population highest prevalence in urethral swabs. Prevalence calculation is based on low number of urethral swabs

Prescriber	Number of cases	% MG positive results
Gynecologist	28	25
General Practitioner	48	43
Anonymous counseling	29	26
Other/unknown	7	6.3

Table 2: Distribution of MG positive results across different prescribers

- Most of the MG positive patients consulted a general practitioner

DISCUSSION AND CONCLUSION

- The CT NG prevalence reported here is equivalent to the prevalence we reported in France in a precedent work in a similar population (1).
- In our population, MG prevalence is higher in men than in women and seems to be intermediate between prevalence previously reported in asymptomatic and in symptomatic women and men (2).
- The overall prevalence of MG (3.7%) was intermediate between the prevalence of CT (7.4%) and NG (1.7%) as previously described (3). MG prevalence varied by age and sex. The highest prevalence was observed in young patients for all 3 infections.

In conclusion, the MGEN TMA RUO assay seems to be an easy to use, rapid and valuable test for MG detection, completely automated on the TIGRIS DST system, using the same Aptima specimen collection kits as for AC2.

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