

**P0974**

**Poster Session IV**

**Molecular epidemiology of Haemophilus, Moraxella, and Neisseria**

**MOLECULAR TYPING BY NG-MAST OF NEISSERIA GONORRHOEAE ISOLATED FROM RECURRENT GENITAL INFECTIONS**

M. Gits-Muselli<sup>1</sup>, **B. Bercot**<sup>1</sup>, F. Lassau<sup>2</sup>, M. Janier<sup>2</sup>, E. Cambau<sup>1</sup>

<sup>1</sup>University Paris Diderot EA 3964, Department of Bacteriology-Virology APHP Lariboisière-St Louis-Fernand Widal Group Hospital Associated Laboratory of the National Center for Neisseria gonorrhoeae, Paris, France ; <sup>2</sup>STD Clinic Diagnosis Department, Lariboisière-St Louis-Fernand Widal Group Hospital, Paris, France

**Objectives:** Gonorrhoea is a bacterial sexually transmitted infection with an increasing incidence, estimated about 106 million people annually (2012) and antimicrobial resistance of *Neisseria gonorrhoeae* (NG) is an increasingly problem. Since relapse and therapeutic failure are often related to resistance, we aimed to identify high risk populations suffering from recurrent infections. Molecular typing methods can distinguish between recurrence and re-infection.

**Methods:** Our study investigated 200 NG clinical isolates from 84 patients (80 males and 8 females) who have consulting at least 2 times for NG infections between 2004 and 2012 at the St Louis's hospital STD Diagnosis Department. Recurrence was determined as an infection with NG isolates of the same sequence types (ST) within less than 6 months whereas re-infection was an infection with a NG isolate with a different ST. NG strains were isolates from 179 urethral, 7 cervical and 14 anal swabs. Molecular epidemiology typing was performed by the reference Multi-Antigen Sequence Typing (NG-MAST) method.

**Results:** The mean age was 30 years with 60% patients being MSM, 40% heterosexual. Co-infection with HIV or *Chlamydiae trachomatis* was observed in 22.6% and 29% of cases, respectively. Among the 200 NG isolates, 102 different ST Types were characterized. Thirty seven of them were novel STs undescribed in the NG-MAST databank. The most frequently observed STs were ST2992 (12%), ST2 (8.5%), ST225 (6%), ST1407 (5%), ST766 (2.5%) and ST40 (2.5%). The ST2992, ST225 and ST1407 were overrepresented in the MSM population, and ST2 strains were found only in heterosexual patients.

A recurrent infection was observed in 21.4% cases while a re-infection with another NG isolate was found in 78.6% of the cases. Recurrences were more frequent in the heterosexual population than in the MSM population suggesting a lack of protection increased especially in the heterosexual population. Two majors ST were observed in case of recurrence of NG infection, ST2992 associated to MSM patients and ST2 to heterosexual population.

**Conclusion:** Our study highlights the usefulness of NG genotyping by the MAST method in order to distinguish recurrence and re-infection. Although this cannot distinguish between recurrence and true relapse, this could indicate which preventing measures are adequate with regard to the population consulting for a second episode of NG infection.