Evolution of gonococcal strain sensitivity to antibiotics in France: data from a national sentinel surveillance network, 2001-2011

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Objectives
An increase in cases of gonorrhea is observed since the late 1990s in France as in other European countries. The recent emergence of resistance to third-generation cephalosporin (TGC) raises an important public health problem. Our study aims to assess the emergence of resistance in France.

Methods
A network of volunteer laboratories allows following the trends in gonococcal. There are approximately 200 public and private laboratories located throughout metropolitan France. Gonococcal strains isolated in laboratories are sent to the National Reference Laboratory for study of gonococcal susceptibility to several antibiotics by E-test.

Results
The number of strains with antibiotic susceptibility results increased tenfold between 2001 and 2011, from 150 to 1,523. These strains were isolated from men in 88% of cases.

In 2011, 23% of strains were susceptible to penicillin (minimum inhibitory concentration [MIC] ≤ 0.064 mg/L) (versus 37% in 2001) and 18% were sensitive to tetracycline (MIC ≤ 0.5 mg/L) (40% in 2001).

The proportion of strains with a high level of resistance to ciprofloxacin (MIC ≥ 1 mg/L) has significantly increased since 2004 and has remained high (14% in 2001, 43% in 2011).

No resistance to spectinomycin (MIC > 64 mg/L) was detected during this period.

In 2010 and for the first time, two strains of 1399 had a decreased susceptibility to ceftriaxone (MIC > 0.125 mg/L), but none in 2011. Strains with reduced susceptibility to cefixime (MIC > 0.064 mg/L) increased (1.6% in 2008, 5.8% in 2009 and 2010, and 7.2% in 2011) although strains with greatly reduced sensitivity (MIC > 0.125 mg/L) remained rare (0.7% in 2011).

Conclusion
The decreased sensitivity of gonococcal strains to TGC is modest but justifies to remain vigilant. Our data support the recommendations of the French Drug Agency recommending the use of ceftriaxone with an adequate dose (500 mg IM in a single dose) as first-line treatment for uncomplicated urogenital gonorrhea.

Keywords Neisseria gonorrhoeae; antibiotic sensitivity, extended-spectrum cephalosporins, E-test, sentinel surveillance