Progress in the surveillance and control of Legionella infection in France, 1998 - 2008

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Background

- In France, the notification of Legionnaires’ disease (LD) cases is mandatory since 1987.
- Following a capture-recapture study in 1995 showing an estimated sensitivity of about 10%, the surveillance system was strengthened in 1997. The estimated sensitivity was 33% in 1998 [1].
- In 1997, the urinary antigen detection test was introduced and a guideline for the prevention and the control of the disease was implemented.
- Our study describes the trend of LD in France from 1998 to 2008.

Method

- Case definitions
  - Patient who presented with pneumonia and one of the following laboratory results
    - isolation of Legionella
    - urinary detection of Legionella pneumophila antigen in urine
    - urinary a fourfold rise in antibody titre to Legionella
  - a presumptive case
     - a single high titre in antibody to Legionella
- An outbreak was defined as the occurrence of at least 10 cases of LD linked in terms of time and place.
- Clinical isolates are grouped by pulsed-field gel electrophoresis (PFGE) and classified into 4 categories:
  - sporadic: isolate with non- previously identified genotype
  - epidemic: isolate with genotype specific to an outbreak
  - endemic: isolate with previously observed genotype and responsible for at least 30 epidemiologically unrelated cases (Paris ST1; Lorraine ST47; Louisa ST52; Biarritz ST40; Mondial ST40) [2]
  - others: isolate with genotype previously identified but not endemic.

Results

- From 1998 to 2008 a total of 11 147 cases were reported. The majority (10 381=93%) were confirmed cases.
- An outbreak was defined as the occurrence of at least 10 cases of LD linked in terms of time and place.
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  - others: isolate with genotype previously identified but not endemic.

Discussion

- The surveillance and control systems for LD in France continue to evolve on a regular basis.
- Several indicators such as notification delay and case fatality rate have improved over the 10-year period. In addition, no outbreak was identified during the last 2 years.
- Extensive media coverage of outbreaks may also have improved the sensitivity of the surveillance system by increasing awareness of the practitioners.
- The median number of cases per outbreak was 22 [range 11-46] and more than 40 cases were reported in only one outbreak (Lyon 2003-2004) [3].
- Several indicators such as notification delay and case fatality rate have improved over the 10-year period from 21% in 1998 to 7% in 2008 (p<10-6).
- Cooling towers were the most probable source of infection (confirmed in 8 outbreaks and suspected in 1 case) for one outbreak a spa was suspected [4].

Conclusion

- The surveillance and control systems for LD in France continue to evolve on a regular basis.
- Several indicators such as notification delay and case fatality rate have improved over the 10-year period.
- Extensive media coverage of outbreaks may also have improved the sensitivity of the surveillance system by increasing awareness of the practitioners.
- Despite the availability of a rapid diagnostic test (UAg), the percentage of number of clinical strains doesn’t decrease.
- The large collection of clinical isolates could contribute to improving our knowledge about the bacteria and the disease.
- The proportion of hospital-acquired cases has decreased but the proportion of travel associated cases is stable.
- Efforts are still required to limit the number of travel associated cases : information and prevention measures need to be encouraged.
- Cooling towers were identified or suspected as the source of contamination for the majority of outbreaks, contributing to improving regulations.
- The surveillance and control systems for LD in France continue to evolve on a regular basis.