

Practices of laboratory for the diagnosis of Legionnaires' disease in France in 2010

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In 2010, 1570 cases of Legionnaires' disease (LD) were registered by the mandatory notification system in France (notification rate: 2.4/10⁵). The great majority of cases (97%) were diagnosed by a positive urinary test. Isolates were available for 18% and 1% of cases were diagnosed by PCR.

The aim of this study was to document methods used by hospital laboratories for LD diagnosis, especially those for urinary tests and PCR in 2010.

A survey was conducted in 423 hospital laboratories. A first email was sent in April and 2 reminders were sent late June and August. The information obtained for each laboratory included: method used for the diagnosis of LD (culture, PCR, urinary tests...), characteristics of the tests (e.g. commercial vs. home-made PCR), urine concentration practices, number of samples received, and number of positive samples in 2010.

Out of 423 laboratories, 57 (13.5%) did not perform any test for *Legionella* in their premises. The majority (343/366 = 94%) of laboratories responded to the survey by providing detailed information. Diagnosis was made by all laboratories by detection of antigens in urine, 142 (41%) performed culture and 26 (7%) performed PCR.

The majority (205/336 = 61%) of laboratories performed urinary test without urine concentration. Only 68 (19%) laboratories used systematically concentrated urine sample for testing. Forty-four laboratories (13%) concentrated the urines occasionally and 19 (6%) upon request. Out of 158 646 urine tests, 0.87% were positives. Proportion of positive tests was significantly higher after concentration of urinary samples (1.06% vs. 0.78%, $p < 10^{-6}$).

This study confirms the increased sensitivity of the urinary test when the urines are previously concentrated. The PCR test is not yet widely used; strengthening awareness of practitioners would allow a greater use of this technique, and as a result, would improve LD diagnosis for an increasing number of patients.