
Water Research, Vol. 35 (15) (2001) pp. 3749-3753
© 2001 Elsevier Science Ltd. All rights reserved.
PII: S0043-1354(01)00075-6

RESEARCH NOTE

Prevalence of *legionella* spp. In swimming pool environment

E. Leoni 1 * eleoni@alma.unibo.it, P.P. Legnani 1, M.A. Bucci Sabattini 2 and F. Righi 1

1 Department of Medicine and Public Health, University of Bologna, via S. Giacomo 12, 40126 Bologna, Italy

2 ARPA: Bologna Provincial Division, via Triachini 17, 40137 Bologna, Italy

Received 1 August 1999; accepted 22 January 2001

Abstract

A study was carried out to evaluate the prevalence of bacteria of the *Legionella* genus in the water from the pools and showers of 12 swimming pools in the city of Bologna (Italy). Sampling took place four times for every establishment, once for each season of the year. *Legionella* spp. were found in 2 of the 48 pool water samples (*L. micdadei* and *L. bozemanii*) and in 27 of the 48 samples taken from the hot water of the showers: 19 were positive for *L. pneumophila* (10-19,250cfu/l) and 18 for other species (20-6000cfu/l). The contamination was seen to be consistent throughout the year, since the same species of legionellae were isolated at different samplings and in concentrations that did not reveal any seasonal trend. The legionellae and the Gram negative bacteria were not found in shower water with a temperature above 43°C. However, in the

samples of shower water with a lower temperature a statistically significant inverse correlation was seen between legionellae and *Pseudomonas aeruginosa* ($r=0.51$; $p<0.01$) as well as between legionellae and Gram negative bacteria ($r=0.70$; $p<0.01$). The potential risk of contracting infections from *Legionella* spp. in the swimming pool environment does not seem to be linked to the pool water, but to that of the showers. The water temperature of showers should therefore be maintained at a level high enough to prevent the reproduction of these bacteria.

Keywords: *Legionella* spp.; swimming pools; water supply

*Author to whom all correspondence should be addressed. Tel.: +39-051-2094800; fax: +39-051-2094829

Full text supplied by [[ScienceDirect](#)]

© [Copyright](#) 2001, Elsevier Science, All rights reserved.