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CHARACTERIZATION OF *LISTERIA MONOCYTOGENES* ISOLATES RECOVERED FROM HUMAN CLINICAL CASES OCCURRING IN PORTUGAL BETWEEN 2008 AND 2012

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Listeria monocytogenes is a ubiquitous organism in the environment and a rare cause of human disease. Infection (listeriosis), an uncommon but quite severe foodborne illness, leads to invasive disease during vulnerable stages of life. The elderly, immunocompromised people, and pregnant women and their foetuses, are at higher risk for *Listeria* bacteremia and meningitis, which can be fatal. The food consumption behaviours of these groups can put them at risk of listeriosis.

In this study, 204 isolates of *L. monocytogenes* recovered from Portuguese human cases of listeriosis, occurring between 2008 and 2012, have been characterized by: (i) biotyping (cadmium and arsenic sensitivity); (ii) geno-serotyping by multiplex-PCR; and (iii) the minimal inhibitory concentration (MIC, µg/ml) of twelve antibiotics (chloramphenicol, ampicillin, penicillin, gentamicin, ciprofloxacin, rifampicin, nitrofurantoin, vancomycin, tetracycline, erythromycin, streptomycin, and trimethoprim/sulfamethoxazole), by the agar dilution method, according to Clinical and Laboratory Standards Institute (CLSI, 2007).

Isolates were classified into three geno-serogroups: IVb (76.9%), IIb (16.2%), and IIa (6.9%). Four biotypes were differentiated: arsenic-sensitive and cadmium-sensitive (67.2%); arsenic-resistant and cadmium-sensitive (14.7%); arsenic-sensitive and cadmium-resistant (10.8%); and arsenic-resistant and cadmium-resistant (7.3%). Resistances to nitrofurantoin ($n=87$), to ciprofloxacin ($n=52$), and to rifampicin ($n=28$) were observed. Erythromycin, ampicillin and penicillin were the most active antimicrobial agents against *L. monocytogenes*, with MIC₉₀ (i.e. MIC for 90% of isolates tested) of 0.5 µg/ml, 0.5 µg/ml and 1 µg/ml, respectively.

The implementation of national surveillance studies monitoring the incidence of listeriosis and antimicrobial resistance of strains of this clinically important pathogen would be most valuable, allowing identification of sporadic and outbreak cases, to detect general trends in antibiotic susceptibilities, and in parallel with food studies, to potentially identify food sources of clinical strain.