

Characterization of *Listeria monocytogenes* isolated from human cases of listeriosis occurred in Portugal in 2008

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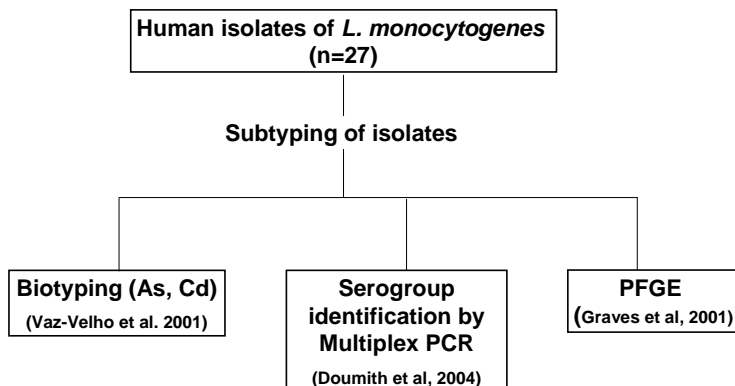
Introduction

Listeria monocytogenes is a ubiquitous psychrotrophic Gram positive bacterium well-characterized as foodborne pathogen that has been involved in serious outbreaks of listeriosis worldwide.

The infection is usually limited to high risk groups such as pregnant women, newborn babies, the elderly and the immunocompromised. The invasive illness, which clinical manifestations include meningitis, encephalitis, late-term spontaneous abortion, and septicemia, although rare has a high fatality rate, between 20 and 30%. Subtyping methods are essential to investigate relationships between isolates to elucidate the epidemiology of listeriosis.

The aim of this work was characterized isolates of *L. monocytogenes* recovered from Portuguese human cases of listeriosis by biotyping (cadmium and arsenic sensitivity), genoserotyping and typing by pulsed field gel electrophoresis (PFGE) using the enzymes *Ascl* and *Apal*.

Materials and Methods



Results

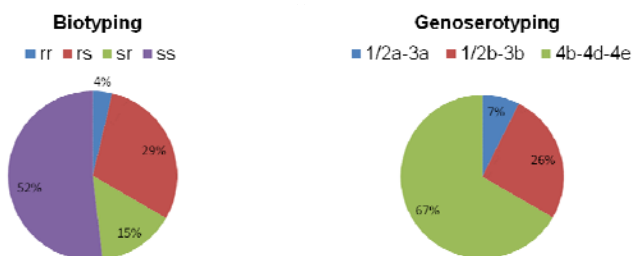


Figure 1: Distribution of isolates of *L. monocytogenes* from human cases of listeriosis in 2008 concerning the susceptibility to heavy metals: arsenic and cadmium (left) and genoserotype (right)

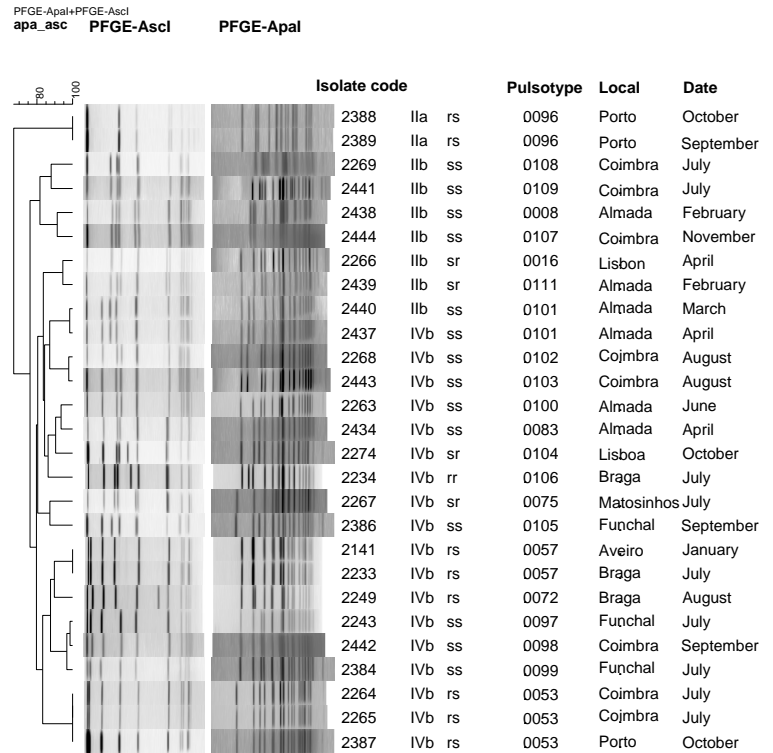


Figure 2 : Dendrogram generated by the combination of *Ascl* and *Apal* restriction patterns of isolates of *L. monocytogenes* obtained from human cases

Conclusion

Sensitivity to heavy metals four groups were differentiated. The predominant group contains 14 isolates (51,9%) - sensitive to arsenic (As) and cadmium (Cd)

Eight isolates (29,6%) were resistant to As and sensitive to Cd, 4 isolates (14,8%) were sensitive to As and resistant to Cd and one isolate were resistant to both metals.

All isolates were classified into one of the three Multiplex-PCR group. 66,7% (18 isolates) into group IVb; 25,9% (7 isolates) in group IIb and 7,4% (2 isolates) in group Ila. Same results were obtained in similar studies in Portugal.

Combined analyses of *Ascl* and *Apal* PFGE yielded a total of 22 pulsotypes. The prevalent pulsotype aggregates three isolates (group IVb), of these two were geographical related. Two others pulsotypes aggregate two isolates time and geographically related.

These results shown that seven pulsotypes were also found in previous years.

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FCT project - [PTDC/AGR-ALI/64662/2006](#) - *Listeria monocytogenes* in foods: contributing data for risk assessment.

