

Antibiosusceptibility spectrum of *Listeria monocytogenes* strains isolated from Romanian clinical and food samples

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Abstract

Listeria monocytogenes has an ubiquitous distribution in nature and could contaminate food of animal origin, causing severe infections in humans.

The main specie of this genus, *Listeria monocytogenes*, causes listeriosis, a severe disease which can lead to septicemia, meningoencephalitis, abortion and stillbirth. The following individuals are at great risk for listeriosis: immunocompromised and elderly patients, as well as infants, and pregnant women (and their unborn children).

Till present, little is known about the antibiotic resistance profiles of these strains. The aim of this study was to determine the antibiotic susceptibility patterns of *L.monocytogenes* strains isolated from clinical samples and food-processing samples, by disk diffusion assay and minimum inhibitory concentration (MIC) of the antibiotics performed using E-test strips.

Clinical samples were collected from 27 patients with septicemia, meningitis/meningo-encephalitis, abortion cases and newborns, hospitalized during 2010-2015. A number of 19 food samples were collected from meat and dairy products, during 2009-2013.

The investigated strains showed a low degree of diversity. All tested *L.monocytogenes* strains from food and clinical isolates revealed the naturally and intrinsically resistant to cephalosporins and nalidixic acid. From clinical samples, two strains (blood culture and cerebrospinal fluid) isolated from an immunocompromised patient with meningo-encephalitis were resistant to penicilins; from food products samples, one strain isolated from boiled shell snails was resistant to sulphamethoxazole/trimethoprim.

Our results can provide informations regarding antibioticsensitivity of *Listeria monocytogenes* strains that can be used in therapy against listeriosis. Ampicillin, or penicillin plus aminoglycoside remain the treatment of choice for most manifestation of listeriosis. Sulphamethoxazole/trimethoprim in association with rifampicin may be used as a second-choice therapy. Most *L.monocytogenes* strains were susceptible to the antibiotics commonly used both in veterinary and human listeriosis treatment.

The obtained results indicate the need for further investigation of the antimicrobial resistance profile of *L.monocytogenes* strains isolated in our country, in order to provide further knowledge concerning the efficacy of different antibiotics used in the treatment of the respective infections.

Keywords: *Listeria monocytogenes*, antibiotics, sensibility