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Abstract

Prevalence of antibiotic resistance of uropathogenic bacteria isolated from contaminated urine

Zahia benmouna-benamar [1, 2], Hayate Messaoui [3], Narimane Abdi [1] and Chahinez Azzi [1]

[1] Department of Living and Environment, Faculty of Natural and Life Sciences, University of Sciences and Technology of Oran Mohamed Boudiaf, USTOMB, PO Box 1505, El Mnaouar, 31000 Oran, Algeria; zahia_benmouna@yahoo.fr;
[2] Laboratory of Research in Arid Areas, Faculty of Biological Sciences, University of Science and Technology Houari Boumediene, PO Box 32, El Alia, Bab Ezzouar, 16111 Algiers, Algeria;
[3] Higher School of Biological Sciences of Oran. Laboratory of Micro-organisms Biology and Biotechnology, University of Oran 1, P.B. 1524, El M'Naouer, 31000 Oran, Algeria; mess_hayet@yahoo.fr

* zahia_benmouna@yahoo.fr; Tel.: 00213 797 572 557
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Abstract: The prevalence of uropathogenic bacteria resistance to antibiotics constitutes a major health problem and it is the subject of much research [1]. The inhibition of the uropathogenic bacteria by lactic acid bacteria is the subject of a number of studies [2]. In this study, we evaluate the resistance, the multi-resistance, the susceptibility of some bacteria isolated from contaminated urine, and their inhibition by three lactic acid bacteria isolated from feed: *Enterococcus faecium* CM9, *Enterococcus faecium* H3 and *Lactobacillus brevis* LBM2.

Methods. The resistance of uropathogenic bacteria to antibiotics was evaluated by the Vitek 2 Compact using an adequate card and was performed as the standard procedure [3]. The inhibition of the uropathogenic bacteria by the lactic acid bacteria strains was performed using the streak agar test described by Ayeni et al. [4].

Results. Ten uropathogenic strains from urine samples obtained from patients with urinary tract infections were isolated, which were identified as: *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Serratia marcescens*, *Staphylococcus aureus*, *Staphylococcus saprophyticus*, *Sterptococcus agalactiae* and *Entrobacter cloacae*. The antibiogram test expressed by Vitek 2 Compact revealed that *Klebsiella pneumoniae* was the most resistant to antibiotics, while *Escherichia coli* was the most sensitive. The study also showed that three lactic strains *Enterococcus faecium* CM9, *Enterococcus faecium* H3 and *Lactobacillus brevis* LBM2 had a strong antimicrobial activity against Gram-positive and Gram-negative uropathogen bacteria.

Conclusions. This research work has shown alarming antibiotic resistance patterns of some uropathogenic bacteria isolated. Thus, it is imperative to rationalize the use of antibiotics, improve hygiene in hospitals and establish a system for continuous monitoring bacterial resistance.

Keywords: uropathogen bacteria; antibiotic resistance; urine culture; Vitek 2 Compact, lactic acid bacteria; inhibitory activity.

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