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Study of the Effect of *Lactobacillus plantarum* on Virulence of *Pseudomonas aeruginosa* Isolated from Wound Infection

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Background: Wound infection represents a major challenge facing all health organizations and increasing difficulties of patient treatment. *Pseudomonas aeruginosa* (*P. aeruginosa*) is one of the most common causative bacterial agents, which is becoming increasingly resistant to many antibacterial agents. It is now an impulsive need to advance the field of alternative treatment. Probiotics are one of these alternatives that can alter the micro-flora of the host, yielding a positive influence on health and body physiology.

Objective: To investigate the effect of *Lactobacillus plantarum* (*L. plantarum*) on two virulence factors of *P. aeruginosa*.

Methodology: This study was carried out in Medical Microbiology & Immunology Department, Faculty of Medicine, Tanta University on forty patients admitted, during the period of research (February 2017 to August 2017). *P. aeruginosa* isolates were identified by results of culture and conventional biochemical reactions. The effect of *L. plantarum* on *P. aeruginosa* was detected by measuring two *P. aeruginosa* virulence factors which are the activity of elastase enzyme and pyocyanin pigment production; before and after the addition of *L. plantarum*.

Results: Among the forty wound samples investigated, the most predominant bacterial isolate was *P. aeruginosa* (50%). *P. aeruginosa* infections were common in males than females with predominance in old age. *P. aeruginosa* viable colony count, pyocyanin production and the elastolytic activity significantly decreased after addition of *L. plantarum*.

Conclusion: *P. aeruginosa* was the predominant bacterial isolate in the studied wound infections. *L. plantarum* had significant anti-pathogenic capacity against *P. aeruginosa*.

Keywords: Probiotics, *P. aeruginosa*, *L. plantarum*, Virulence

Biography

Maii Atef Shams Eldeen, Egyptian married female from Tanta, Gharbia, Egypt, working as a lecturer of Medical Microbiology, Faculty of Medicine, Tanta University, Egypt. She is the head of Public Service Center at the same faculty. She obtained several academic degrees throughout her career starting from M.B.B.CH, M.Sc & MD of Medical Microbiology, Professional diploma of infection control and Diploma in Health Profession Education. She works as a trainer in many teaching and developmental courses in and outside of her faculty. She has 8 scientific researches published nationally and internationally.

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