Original Paper

Evaluation of anti-microbial activity of *Lactobacillus acidophillus* and *Lactobacillus ruteri* against entero-pathoges by in vitro and in vivo methods

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Abstract

Background and Objective: Probiotics are beneficial organisms therapeutic within microbial flora. *Shigella, Escherichia coli* and *Salmonella* are the most common cause of intestinal infectious diseases that lead to morbidity and mortality in infant and children worldwide. The aim of this study was to evaluate anti-microbial activity of *Lactobacillus acidophillus* and *Lactobacillus ruteri* against entero-pathoges by in vitro and in vivo methods.

Methods: In this experimental study, the therapeutic effect of the lactobacillus acidophilus ATCC 4356 and *ruteri* ATCC 23272 against *Shigella sonnei* ATCC 9290, *Escherichia coli* ATCC 25922 and *Salmonella enterica* BAA-708 were evaluated by in vitro (spot agar) and in vivo (BALB/c mice) methods. Weight improvment and survival rate in mice were recorded.

Results: *Lactobacillus acidophillus* and *ruteri* had protective and therapeutic effect against diarrhea caused by pathogenic bacteria. Probiotics reduced the weight, colonization of pathogens and increased the survival rate of animals ($P<0.05$).

Conclusion: *Lactobacillus acidophillus* and *ruteri* has anti-microbial activity and their consumption can be effective in the prevention and also the treatment of intestinal disease.

Keywords: Entero pathogens, Probiotics, Antibacterial activity, Mouse

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