

عنوان مقاله:

A comparison between the effects of antibiotics and cell free supernatant of Lactobacillus spp. on growth of ESBL positive K.pneumoniae

محل انتشار:

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خلاصه مقاله:

Background and Aim: within recent 15 years, extended spectrum beta lactamase (ESBL) positive agents have caused many infections which could be a serious threat to the antibiotic therapy. The aim of this study is to compare the effect of antibiotics and Cell Free Supernatant (CFS) of Lactobacillus spp. culture on the survival of K. pneumoniae ESBL positive isolates that cause nosocomial infections. Methods and Materials: The antibiograms were determined for 7 K. pneumoniae clinical isolates (expressing CTX-M, TEM and SHV beta-lactamases) according to Kirby-Bauer method. Minimum Inhibitory Concentration and Minimum Bactericidal Concentration for selected antibiotics were determined according to CLSI guidelines. In order to evaluate the effect of Lactobacillus acidophilus, L. casei, L. fermentum, L. plantarum and L. rhamnosus' CFS on K. pneumoniae isolates, well-diffusion method, MIC and MBC determination were used. To determine the probable effective agent of CFS on inhibition of K. pneumoniae growth, CFS were neutralized and evaluated again according to MODA method. Results: All K. pneumoniae isolates were resistant to gentamicin, cephalothin, ceftazidime and ciprofloxacin. The CFS of L. plantarum and L. rhamnosus and their acidic metabolites had the most antimicrobial effect. Conclusion: Functional disorder would occur through enzymes inactivation and increasing cell membrane permeability by the effect of acidic metabolites of CFS, while K. pneumoniae isolates became resistant to some antibiotics with specific site of action. Therefore, CFS of Lactobacillus spp. could be an appropriate alternative for selected antibiotics against these K. pneumoniae isolates

کلمات کلیدی:

Klebsiella pneumoniae, antibiotic resistance, cell free supernatant of Lactobacillus spp
کلبسیلا پنومونیه، مقاومت آنتی بیوتیکی، مایع شناور فاقد سلول لاکتوباسیلوس ها

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