Influence of Pediococcus Pentasaceus Isolate "Dadih" (Buffalo Milk Fermended in Bamboo) the Bowel Frequence, Secretory Immunoglobulin a Level and Height of Ileum Villi of the Mice EPEC Induced Diarrhea

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Abstract : The aim of this study is Enteropathogenic Eschericia coli O157 (EPEC) is one of the pathogen that can cause inflamation and damage intestinal mucosa, which is leading diarrhea. Inflamation in the intestinal mucosa proved by the presence of secretory Immunoglobulin A (sIgA) on the feces. Isolate dadih is Pediococcus pentosaceus (P. pentosaceus) as a probiotic lactic acid bacteria (LAB) is very usefull to improve sIgA and intestinal mucosa. The objective, to determine the dose and duration administration of P. pentosaceus for bowel frequence, sIgA level and height of illeum villi in mice EPEC-induced diarrhea. Method, using Complete Randomized design studies in mice EPEC-induced diarrhea. Mice was classified into 2 factors. A factor (dose of probiotic) and B factor (duration of probiotic observation) consisted of 0 hour, 12 hours, 24 hours and 36 hours. A factor consisted of negative control, positive control (mice induced by EPEC) and 3 different dose experimental mice. The results were a very significant interaction between dose and duration administration of P. pentosaceus. Mean of the most frequent defecation of mice EPEC-induced was 55 graetly reduced into 12 ,after 24 hours administration P. pentosaceus dose 2 x 1010 cfu/g, Mean of sIgA level of mice induced EPEC was 1,60 µg/ml. Very significant different (p<0,01). Mean of sIgA level after 24 administration P. pentosaceus dose 2 x 1010cfu/g was 2,65 µg/ml. Mean of height of illeum villi after induced EPEC 53,04 µm with very significant different after 24 hours administration P. pentosaceus dose 2 x 1010cfu/g (142,881µm). This study concluded that P. pentosaceus dose 2 x 1010cfu/g after 24 hours is very beneficial to reduced bowel frequence, increase sIgA level and improve the height illeum villi of mice EPEC-induced diarrhea.

Keywords : Pediococcus pentosaceus, sIgA, enteropathogenic Eschericia coli O157, diarrhea, illeum villi Conference Title : ICMPBB 2015 : International Conference on Medical Physics, Biophysics and Biotechnology Conference Location : Jeddah, Saudi Arabia

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