ABSTRACT

Effect of Bisacodyl on Expression of mRNA Aquaporin-3 and Aquaporin-4 in Morphine Induced Constipation

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This study aimed to analyze effect of bisacodyl level expression of AQP3 and AQP4 in male mice of the Balb / c line genus. Observations were made over a period on the seventh day, starting on the first day given morphine, then continued with bisacodyl on the 3rd to 7th day in a condition of morphine induced constipation. The parameters observed were fecal water content and colonic bead expulsion on the 2nd day of giving morphine, on the 3rd day of giving morphine + bisacodyl and on the 7th day of giving morphine + bisacodyl which was then measured expression of AQP-3 and AQP-4 carried out by the PCR (Polymerase Chain Reaction) method.

The results of the study, therapy bisacodyl to constipation in mice induced by morphine, showed that bisacodyl decrease expression of mRNA AQP-3 and AQP-4 ($p < 0.05$), increase the percentage of faecal water content from the beginning ($28.380 \pm 2.801\%$) to ($53.998 \pm 2.443\%$) with a p value <0.0001 and decreased in bead evacuation time from the beginning (74.868 ± 12.974 minutes) significantly decrease to a normal condition (29.834 ± 3.568 minutes) with p value = 0.004.

Based on the description above, it can be concluded that administration bisacodyl in morphine-induced constipation of mice was effective to decrease expression of mRNA AQP-3 and AQP-4, decrease bead evacuation time and increase the percentage of faecal water content.

Keywords : AQP-3, AQP-4, Bead Expulsion, Bisacodyl, Constipation, Fecal Water Content, Morphine