

More convenient and helpful for colitis patients? An absorption enhancer may do

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Previous studies have shown the beneficial effect of rebamipide, a novel anti-ulcer drug, on experimental colitis. The permeabilities of rebamipide in different intestinal segments remained unknown.

A research article to be published on August 21, 2008 in the *World Journal of Gastroenterology* addresses this question. The research team led by Guo-Feng Li from Nanfang Hospital, Southern Medical University in China investigated the permeability of rabamipide across different intestinal membranes, analyzed potential transportation mode, and observed the effect of sodium laurate (C12) as an absorption enhancer on the permeability of rebamipide across colonic tissues. Furthermore, the effectiveness of chitosan on the colon-specific delivery of rebamipide and the influence of combination chitosan with absorption enhancers on colon specific delivery of rebamipide were explored.

The permeabilities of rebamipide across the jejunal and ileal membranes were higher than the colonic membranes, as monitored by using chamber experiment. Both C12 and labrasol significantly increased permeability of rebamipide across the colon membranes. The release of rebamipide from chitosan capsule was less than 10% totally within 6 h. The areas under concentration-time curve (AUC) in the colon mucosa (AUCLI, 16011.2 ng•h/g) were 2.5 times and 4.4 times greater than using gelatin capsules and CMC suspension, respectively. Meanwhile, AUC in the plasma (AUCPL) were 1016.0 ng•h/mL for chitosan capsule, 1887.9 ng•h/mL for CMC suspension and 2163.5 ng•h/mL for gelatin capsule. The results suggested that both AUCLI and AUCPL increased when C12

was administered simultaneously, but the increase of AUCLI was much greater; drug delivery index (DDI) was higher in C12 + chitosan than in chitosan capsule group.

Since the present experiments have demonstrated the possibility of chitosan capsule as a specific colon delivery carrier of rebamipide in rats, study of the drug-filled chitosan capsule should be the next step, including large scale preparation and clinical usage. It can be expected that chitosan capsule of rebamipide compounded with absorption enhancer, C12, can be used to treat colnitis effectively in the future.

Source: World Journal of Gastroenterology

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