IS-20
Effect of valine rich diet on rat model of short bowel syndrome

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Purpose: It has been recently reported that valine, which is one of the branched chain amino acid, enhanced liver regeneration after hepatectomy in rats. The aim of this study is to investigate the effect of enteral valine supplementation on the intestinal adaptation of short bowel syndrome using a rat model.

Methods: Seven weeks old male Lewis rats underwent the 90% small bowel resection. On fourteen days before operation, the rats were randomly divided into two groups; valine group(valine rich diet which contains valine five times as much as normal rat chaw) and control group (normal rat chaw), according to their each diet received. The rats were sacrificed and evaluated on 7days after operation(7POD) and 1month after operation(1POM) respectively. The parameters of estimation were body weight(BW) and the morphological examination of the residual small intestine including wet weight, villous height and crypt depth.

Results: The BW of the valine group on 7POD significantly increased than the control group, while the BW of the valine group on 1POM showed lower than the control group. It was also showed that the wet weight and jejunal crypt depth of the valine group on 7POD were significantly greater than the control group, however, those of the valine group on 1POM were smaller than the control group.

Conclusion: These results suggest that valine rich diet enhances intestinal regeneration after small bowel resection on acute phase. However long-term valine rich diet supplementation might disturb the intestinal adaptation.