Comparison of absorption of trace elements on liquid and partially solidified enteral nutrition consist of the same elements

- Examination about receipt and disbursement balance of trace elements after partially solidified enteral nutrition administration to rats -

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Abstract

[Aim] With the expanding use of enteral nutrition, aspiration pneumonia due to gastroesophageal reflux is an increasing concern in patients receiving tube feeding. To avoid this complication, partially solidified enteral nutrition formulations are used in hospital and home based care. However, examination about nutritive absorptivity by a difference of properties of matter is hardly done. We investigated the influence that partially solidified gave absorptivity of trace element.

[Method] We administer orallied enteral nutrition which are liquid and partially solidified enteral nutrition consist of the same elements for two weeks in rats. Afterwards, we obtained urine and feces and blood in rats, then we measured trace element level in these samples by PIXE method.

[Result] As for the serum zinc level of a group of administered half partially solidified enteral nutrition, significant degradation was observed in comparison with a group of administered fluid enteral nutrition. In elemental receipt and disbursement balance of partially solidified enteral nutrition administrated group, zinc and copper and iron and calcium and magnesium and sulfur and potassium compared it with fluid and were low. It was suggested that a difference occurred for elemental absorption in a difference of properties of matter by this study.