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Implementation of the dieticians' recommendations on enteral energy and protein intakes improved head injury patients' recovery in the neurosurgery ICU

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Underfeeding is a common problem in head injury patients in intensive care units (ICUs). This study investigated the effects of implementing of dietician recommendations on early and better provision of enteral nutrition in head injury patients admitted to the neurosurgery ICU. Forty-eight consecutive patients were divided into two groups of 24 patients each. In the first group, patients were fed based on physician's orders without any nutritional assessment and based on patient's tolerance. In the implementation group, each patient was fed based on nutritional requirements assessed by a dietician. Collected data included the time of initiation of feeding, the actual amounts of daily energy and protein intake on day 4 of hospitalization, the duration of mechanical ventilation and ICU stay for patients in both groups. The findings showed that the timing of initiation of enteral nutrition decreased significantly in patients after implementation. Additionally, patients under dietician's recommendation received more energy and protein on day 4 of feeding. Clinical outcomes including length of mechanical ventilation and ICU stay decreased non-significantly after implementation. The study showed that the presence of a dietician improved the energy and protein intake and the timing of initiation of feeding in head injury patients in ICU care unit team to improve the rate of undernutrition in head.

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Threonine affects digestion capacity and hepatopancreatic gene expression of juvenile blunt snout bream (*Megalobrama amblycephala*)

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The present study conducted a 9-week feeding trial to investigate the effects of threonine (Thr) on the digestion capacity and hepatopancreas gene expression of juvenile blunt snout bream (*Megalobrama amblycephala*). For this purpose, three tanks (300 liters per tank) were randomly arranged and assigned to each experimental diet. Juvenile fish were fed with diets containing graded Thr levels (0.58, 1.08, 1.58, 2.08 or 2.58% of the diet) to apparent satiation four times daily. At the end of the feeding trial, the results indicated that hepatopancreas weight, hepatosomatic index, hepatopancreatic protein content, intestinal weight, intestosomatic index and intestinal protein content increased with increasing dietary Thr levels up to 1.58% and thereafter decreased ($P < 0.05$). The activities of chymotrypsin, trypsin, amylase and lipase elevated as dietary Thr levels increased up to 1.58% ($P < 0.05$), while these activities decreased in most cases after 1.58% dietary Thr except for chymotrypsin and trypsin in the hepatopancreas (plateau 1.58-2.08% Thr). The relative gene expression levels of chymotrypsin, trypsin, amylase, lipase, target of rapamycin and insulin-like growth factor-I were up-regulated and the highest values were observed with 1.58% dietary Thr or 1.58 and 2.08% dietary Thr, whereas the relative gene expression levels of eukaryotic translation initiation factor 4E-binding protein 2 gradually decreased ($P < 0.10$) as dietary Thr levels increased up to 1.58% and thereafter significantly increased ($P < 0.05$), which could explain that about 1.58% dietary Thr could improve the growth and development of digestive organs and activities of digestive enzymes of juvenile blunt snout bream.

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