NUTRITION AND CANCER

Studies on nutritional abnormalities, nutritional support and protein metabolism in malnourished cancer patients

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ABSTRACT

A series of studies to evaluate the nutritional and metabolic abnormalities and role of nutritional support in malnourished cancer patients have demonstrated the following: 1. In an oncology outpatient population, anorexia is the commonest symptom and the one that concerns patients the most. 2. Dietary recall histories have a role in detecting potential nutritional deficiencies in cancer patients and reveal that inadequate diets are very common. 3. The palatability of oral liquid dietary supplements differ between cancer patients and control groups and the preferences of individual patients need consideration when providing dietary advice. 4. The taste thresholds for salt and bitter basic taste sensations were significantly elevated in cancer patients. Such abnormalities play a role in taste preferences. 5. Multiple abnormalities of anthropometric and biochemical tests of nutritional status are present in cancer patients with weight loss but there are poor correlations between the anthropometric and biochemical data. 6. Enteral nutritional support in malnourished cancer patients usually failed to reverse the nutritional deficits even if positive nitrogen balance was achieved. This is unlike the syndrome of pure protein-energy malnutrition and consistent with the concept of a hypercatabolic state associated with malignancy. 7. The plasma concentration of C-reactive protein was frequently elevated in malnourished cancer patients, suggesting an associated acute phase response. 8. Amino acid analysis in malnourished cancer patients suggests there are three groups of cancer patients - (a) those with an acute on chronic catabolic state (high branched chain amino acids); (b) a normal response to protein-energy malnutrition (low branched-chain

amino acids) and (c) a hypercatabolic response (normal or high branch chain amino acids). 9. Studies of albumin metabolism in cancer also suggested cancer patients may be hypo or hyper-catabolic in response to weight loss as evidenced by high or low fractional catabolic rates of albumin. In addition, one of the causes of hypoalbuminaemia in cancer is a redistribution of albumin to the extravascular space. 11. It is postulated that host or tumour derived products might be the cause of the increase in catabolic rate in cancer patients and that plasma exchange may help to demonstrate the presence of such substances. Preliminary studies with plasma exchange are discussed.