

## Clinical nutrition support

### *Better control and assessment are needed*

Clinicians in hospital have become increasingly aware that protein-calorie malnutrition may be a considerable problem during the management of patients with both medical and surgical disorders, and both enteral and parenteral nutrition are now widely used. Nevertheless, few data have been available on the practice of these techniques in Britain. Two national surveys were done in the 1980s on nutritional support in hospitals; both were concerned with nasogastric enteral nutrition, and changes in attitudes could be compared over the six years from 1981 to 1987.<sup>1,2</sup>

A new national survey just published gives for the first time a general overview of nutritional support practices in hospitals in Britain.<sup>3</sup> Fifty three questions designed to determine current clinical practice in the management of the nutritionally compromised hospital patient were sent to each of the 206 district dietitians listed with the British Dietetic Association. Dietitians were approached because they had given high response rates to previous surveys, but as it was recognised that dietitians are not always directly concerned with parenteral or some aspects of enteral nutrition the respondents were asked to contact others to answer specific questions. A response rate of 73% for this complex questionnaire was achieved in four months. The survey was divided into general, enteral, and parenteral sections. The most important findings were, firstly, the enormous diversity of nutritional support practices in different hospitals and districts in Britain, and, secondly, the small proportion of hospitals or districts (about one quarter) that have a multidisciplinary nutrition team or group to advise on clinical practice.

Why is this? Several reasons can be suggested, going back to the lack of basic training in clinical nutrition in undergraduate medicine. Recently defects in undergraduate training have been recognised and attempts to redress the balance have been made.<sup>4</sup> At present, however, clinical nutrition is not recognised as a specialty or subspecialty in medical practice in Britain. Consequently no particular medical group can be said to predominate in making decisions about the administration of clinical nutrition. In many hospitals nutritional support may be the responsibility of one of the junior staff, and continuity may be lost when the holder of the post moves. Furthermore, total parenteral nutrition and enteral nutrition are considered by many as unrelated treatments, enteral nutrition often being considered to come under the remit of hospital dietitians and to be of little interest to medical clinicians. The results of this may be poorer standards of care for patients who are nutritionally compromised; increased

costs; and, more importantly (though nowadays, sadly, some might disagree), higher morbidity and thus longer inpatient stay. Decisions about the need for and nature of nutritional support should not be made by people who are unfamiliar with the indications for nutritional support and the best methods and techniques by which it can be given.

Specific examples of practices that could be considered suboptimal are highlighted by a new survey. Despite the widespread use of nutritional support (and few would deny its potential value) it is not always clear which patients will benefit.<sup>5,6</sup> For example, though many clinical trials have been undertaken to determine whether morbidity and mortality are reduced by giving nutritional support to surgical patients in the perioperative period, the results have generally been inconclusive. This is in part due to poor trial design,<sup>6</sup> but recent studies have again failed to show a definite benefit.<sup>7,8</sup> Despite evidence such as this the survey records that 35% of respondents used routine perioperative nutritional support, the two most common indications being for oesophagogastric surgery and maxillofacial or head and neck surgery. By contrast, only just under 2% of respondents cited orthopaedic patients as regularly receiving enteral nutrition support—a disappointing figure as these comprise one of the few surgical categories in which selected patients have been shown to benefit from such support in controlled clinical trials.<sup>9</sup> The cost implications nationally of nutritional treatment (up to £100 a day in the case of total parenteral nutrition) are enormous if inappropriate nutritional support is being administered even to only a small proportion of patients. The cost implications of failing to give appropriate nutritional support may be substantially greater. Not only are properly designed and controlled clinical trials needed but considerable wisdom and skill are required to interpret the clinical significance of apparent improvements in techniques.

All these comments on the costs of total parenteral nutrition also apply to enteral nutrition. Although the daily cost of enteral nutrition may be only a fraction of that of total parenteral nutrition, its more widespread use (as both tube feeds and supplements) may also result in considerable expenditure that could be reduced. For example, the use of disease specific enteral diets such as formulas enriched with branched chain amino acids for patients with hepatic encephalopathy (used by 15% of respondents to the survey) may have substantial theoretical benefits—but, as is often the case when treatments are examined in the environment of a randomised controlled clinical trial, theoretical benefit

does not necessarily equal clinical benefit.<sup>10</sup> Furthermore, elemental (chemically defined) diets with a nitrogen source of amino acids or peptides are often advocated for patients suffering from "malabsorption." This term may often be used inaccurately, and as a result elemental diets are sometimes prescribed for patients whose digestive and absorptive capacities are normal, such as many patients during the postoperative period. Physiological and clinical studies have clearly shown that only in patients with severe disease or with very short bowels are there likely to be any rate limiting or absorptive problems with the cheaper whole protein (polymeric) diets.<sup>11 12</sup>

The survey showed that the techniques of administration of enteral nutrition were varied. Almost half of the respondents used a starter regimen when beginning enteral nutrition—though there is no clinical indication to do so.<sup>13 14</sup> Just over one fifth never used radiography to check the position of the tube, though there are certain groups of patients (those with altered consciousness, no gag reflex, or on ventilators) in whom this should be mandatory.<sup>15</sup>

Several points of interest were noted for total parenteral nutrition. Although peripheral administration of total parenteral nutrition was used by up to 60% of correspondents, it accounted for only 7% of total parenteral nutrition regimens, and these were predominantly in paediatric units. Well over half of the total parenteral nutrition courses administered in Britain are for less than 14 days, and thus many of these patients could be given total parenteral nutrition through the peripheral venous route. The historical reason for using the central venous route for administration of total parenteral nutrition is the high incidence of thrombophlebitis of peripheral veins caused by solutions of high osmolality. Several techniques have been identified that allow total parenteral nutrition to be satisfactorily administered through peripheral veins in a substantial proportion of patients.<sup>16 17</sup> This route avoids the main risk factor—central venous catheterisation—causing complications. The incidence of infection during central venous catheterisation reported in the survey ranged from 0% to 90%. The incidence of this complication has been shown to be significantly reduced when catheter care is monitored by a specialist nurse and in most cases should be avoidable.<sup>18-20</sup> The findings that only 38% of nutrition teams have specialist nurses and that only 11% of the changes of dressing during central venous catheterisation for administration of total parenteral nutrition were undertaken by such nurses may account for the high incidence of infection reported. The results of the survey and the examples discussed here suggest that patient management may be at odds with the concept of "best documented practice."<sup>21</sup>

In these days of audit it is most disconcerting to find that only half of the respondents were able to document accurately the number of patients and length of time for which total parenteral nutrition and enteral nutrition were administered. Enteral nutrition was documented less accurately than total parenteral nutrition. In hospitals with nutrition teams or groups data are more accessible and better documented, though they may still not be completely accurate. Various groups representing different disciplines (the National Nurses Nutrition Group, the Parenteral and Enteral Nutrition Group of the British Dietetic Association, the Small Bowel/Nutrition section of the British Society of Gastroenterology) have been formed in recent years. In each case membership has been limited to respectively nurses, dietitians, and gastroenterologists. These groups, particularly the British Dietetic Association group, have played an active part in reviewing and promoting awareness of nutritional support practices.<sup>22 23</sup> Each group can, however, work predominantly only in the context of its own expertise.

We believe that a multidisciplinary national group should be established, combining the different skills of clinicians, dietitians, nurses, pharmacists, microbiologists, chemical pathologists, and biochemists. Such a group would be able to propose guidelines to improve the standards of clinical nutritional practice in Britain in a similar manner to the American Society of Parenteral and Enteral Nutrition.<sup>24 25</sup> Among other important functions, it should be able to liaise closely with the Department of Health so that provision can be made for the supply of necessary funding for nutritional support to each district in Britain, both in hospitals and in the community. The group should try to establish an experienced multidisciplinary nutrition team within each district to advise colleagues about the clinical practice of nutritional support. Apart from the benefits in patient care—such as reductions of complications—experience has clearly shown that the cost effectiveness of providing nutritional support will actually be improved.<sup>16 26 27</sup> The recently formed Clinical Metabolism and Nutritional Support Group of the Nutrition Society<sup>28</sup> plans to investigate the feasibility of establishing such a multidisciplinary group. Whether a group within a society that requires election to its membership will achieve that goal remains to be seen.

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