



# Undernutrition in hospitals targeted by Council of Europe

*The problem of undernutrition in European hospitals is being tackled head on by a major Council of Europe (Conseil de l'Europe) initiative, Dr L. Ovesen, Food Administration of Denmark, told a symposium on undernutrition chaired by R. Kluthe (Germany) and J. Kondrup (Denmark).*

The project, which is underway in Sweden, Norway, Finland, Denmark, France, Germany, Switzerland and the United Kingdom is called 'Food and Nutritional Care in Hospitals; How to Prevent Undernutrition'.

The main aims of the project are to review hospital food provision practices, highlight deficiencies and to consider how politicians, hospital administrators, food service and health care personnel, might work together to improve the nutritional care and support of hospitalised patients.

A Guidelines Committee has drafted guidelines to improve current practice. These will be distributed to national authorities, hospital managers, health care and food service professionals, and patients,

Dr Ovesen said that the first stage of the project had been comprehensive information collection about nutrition services of hospitals in member countries. Baseline data was collected on hospital size, organisation (e.g. nutritional steering committees, support teams, responsibility assignments) and practices (e.g. nutritional screening, nutritional support and counselling).

"A surprising finding was the wide variation in nutrition screening practices," said Dr Ovesen. In Switzerland, Denmark, and France there was no routine nutritional screening, but in Norway such screening was routine in about 60% of hospitals - in Germany, in about one in four hospitals.

The proposed guidelines will recommend that evidence based nutritional risk screening be undertaken. Assessment should be easy to use, simple to understand and should include a

combination of nutritional status and disease severity. Identification should be followed by a treatment plan including dietary goals, monitoring of food intake and body weight.

Turning to feeding and outcome, Dr Ovesen said that feeding probably improved outcome in patients who were critically ill, severely malnourished or moderately stressed and malnourished.

He added that the project had identified a number of barriers to optimal nutritional care. These included lack of clearly defined responsibilities and planning in managing nutritional care and lack of sufficient educational level with regard to nutrition among all staff groups.

Of special concern was the identification of a lack of co-operation between different staff groups and lack of involvement by hospital administration.

He concluded that more studies were needed on clinical outcome of nutritional support in patients identified by nutritional risk screening. Moreover the effect of ordinary food, including energy dense diets, meal pattern, menu choice and meal ambience, on intake and patient well-being requires investigation.

"Organisational research to improve the co-operation between different staff groups and studies on the interrelation of food service technology and food service management and organisation, and meal serving systems, is also a priority."

The Council of Europe report will be discussed at a European Forum called 'Food and nutritional care in hospitals: acting together to prevent undernutrition' to be held 21 to 22 November 2001 in Strasbourg, France.



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## How to avoid ethical pitfalls in clinical nutrition

*Ethics in clinical nutrition was the controversial subject of a symposium chaired by J. Kinney (USA) and B. Koletzko (Germany).*

Addressing ethical dilemmas in artificial nutrition, J. MacFie, Scarborough Hospital, UK, said that ethical questions about nutritional support had been clarified in the wake of the Tony Bland case in which a young man suffered anoxic brain damage. His feeding tube was withdrawn following a judicial appeal and he died eleven days later.

Subsequent ethical guidelines made it clear that medical decisions for mentally incapable people should be made in the best interest of the patient. If a decision to withdraw or withhold life-prolonging treatment is in the best interest of the patient then it is lawful.

“There is no legal difference between withholding and withdrawing treatment – and we must remember that artificial nutrition and hydration constitute medical treatment,” said Dr MacFie.

An interesting point was that ‘advance directives’ (‘living wills’) did not need to be a formally drafted legal document. A living will could be enshrined in a set of doctors notes. “If someone has told their doctor over a number of years that they do not wish a certain treatment – then you become liable for a charge of assault if you ignore their wishes,” he said.

Professor K. N. Jeejeebhoy, Canada, told the symposium that more than a third of US funded research approved by independent review boards had subsequently been shown to raise ethical concerns (Archiv. Int. Med. 2001: 161:925). He advised the audience to ensure that guidelines about informed consent and the appropriate use of placebo controls be scrupulously followed.

### Good mealtime care can reduce the ethical dilemmas of tube feeding

The ethical quality of care within institutions is determined not only by the way it deals with major ethical dilemmas such as end of life decisions, but

also involvement in daily care, such as the organisation and quality of daily mealtime care, Professor C. Gastmans from the University of Leuven in Belgium, told the scientific symposium on ‘Ethics in clinical nutrition’.

Review of the literature suggested that artificial feeding of severely demented and terminally ill patients increased the risk of aspiration pneumonia and other infections, and often required physical restraint. There was no evidence that is associated with increased survival, functional status or comfort for the patient.

“Tube feeding does not seem justified in patients with advanced dementia,” he said. “Based on these clinical results and inspired by respect for the person and a dignified process of dying, I suggest that the artificial administration of food and fluid must be progressively reduced when the patient has been determined to have reached a terminal stage or an irreversible declining process. In this context tube feeding is meaningless since there is not the slightest prospect of therapeutic change.” Treatment should progress, he said, towards basic hygiene and palliative care of the dying person.

However, he said that in many cases attentive mealtime care can postpone the artificial administration of food and fluids and can even make its administration unnecessary, thus avoiding the complex ethical problems connected with artificial feeding.

He called for a greater focus on the quality of mealtime care within institutions and urged that tube feeding be considered as an exceptional measure that is only used in very specific situations “where there are still therapeutic reasons to use it”.



# Evidence for glutamine continues to grow

***Glutamine has received much attention over the past 10 years in relation to both enteral and parenteral feeding. Opening the scientific session on the role of glutamine, co-chair Professor D. Wilmore from the USA pointed out that a recent meta-analysis of intervention trials with this one amino acid alone, has suggested a mortality benefit.***

Not surprising, then, that glutamine has been the subject of many posters at ESPEN. Several had been produced from Professor Jan Wernermann's group at Huddinge University Hospital, Stockholm. He reviewed these papers, which showed the variable effects of treatment with glutamine in different tissues, in both surgical and intensive care patients. He concluded that much further work needed to be done on the pathophysiology and science of glutamine metabolism in order to understand the variable effects of treatment.

Professor E. Roth from the University of Vienna, Austria, reviewed work in several experimental models showing that glutamine levels are reduced in the postoperative state, and also in injury and infection, abdominal sepsis and starvation. He said: "Glutamine is an important immunoregulatory amino acid, and we will learn in the future how to use it and in which conditions."

Dr J. Neu from the USA showed that there are some situations in which there is already a strong case for using supplemental glutamine. Dr Neu has been involved in neonatal intensive care since the 1970s. The discipline has seen a tremendous improvement in terms of survival though at the cost of an increase in low birth weight babies with chronic lung disease, sepsis, necrotising enterocolitis and poor neurodevelopmental outcome.

Nutritional support can play a major role in improving this toll of morbidity. Yet Dr Neu pointed out that several catabolic regimens were often used in neonatal intensive care units:

- withholding of enteral feeding
- withholding of IV amino acids and lipids
- giving dexamethasone for up to 6 weeks

With respect to glutamine, Dr Neu said Neonatal Intensive Care Units (NICU) generally did not give it to low birth weight infants in the first few weeks of

life as it is considered non-essential and is unstable in aqueous solution. Yet, as he reminded delegates, the foetus takes up more glutamine than any other amino acids and releases more glutamate than any other amino acids, by the glutamine-glutamate shuttle. In the placenta, glutamate is involved in the production of NADPH, which is important in fatty acid and sterol biosynthesis, which in turn is thought to be important in the maintenance of pregnancy.

The benefit of supplemental glutamine in very low birth weight babies was shown in the 1990s, when two randomised double-blind studies had shown that it:

- decreased hospital-acquired sepsis
- decreased activation of T-cell subsets (with lower bacterial translocation)
- improved tolerance to enteral feeding
- altered plasma amino acid profile
- reduced hospitalisation costs
- reduced time on mechanical ventilation
- was safe when mixed fresh daily at the doses used

Several multicentre supplementation trials are underway, which should provide further information on safety and efficacy, and whether enteral or parenteral administration is preferable. But they will provide very little in terms of mechanistic information. Although glutamine appeared to act through several mechanisms, Dr Neu hypothesized that lack of glutamine led to loss of epithelial integrity, which allowed bacterial translocation, resulting in sepsis and other forms of distal organ damage such as chronic lung disease.

However, other mechanisms had also been proposed and need to be investigated. "For instance, does glutamine improve innate immunity? Does it affect protein synthesis and degradation pathways during stress? Does it act as an energy substrate? Last but not least, are there other critical nutrients that these low birth weight infants are not receiving?"



# Budgets and managed care pose a growing threat to nutrition support

*The problems caused by budget based medicine are slowly being recognized by politicians, but the constraints of budgets are a daily problem in clinical practice, said Dr H. Lochs, Medizinische Klinik, Berlin, Germany.*

Dr Lochs said that the traditional system of hospital admission justified by medical staff with payment per day of hospital stay and no strict documentation, was increasingly being replaced with a system in which admissions were questioned by insurance companies, payment was per diagnosis, and there was a rigid need for documentation.

However, he felt that nutrition interventionists could argue their corner with cost conscious administrators. For more than a decade there had been studies demonstrating that malnutrition adversely affected outcome. Although more studies were needed, there was also data to show that nutritional interventions were cost saving, even allowing for the cost of the oral supplements.

Speaking in the same symposium, Dr G. Jensen, Vanderbilt Center for Human Nutrition, Nashville, USA, warned the audience about the pitfalls of managed care for clinical nutrition.

Dr Jensen warned European doctors about the risks posed by managed care if it followed the US model. "Managed care in USA is not a pretty picture and has had an adverse impact on clinical nutrition," he said. "Whatever the advocates say, managed care is all about controlling costs and saving dollars." He said. The reality of managed care often differed from that promised by enthusiasts.

"Quality has not improved, the cost of managed care plans is increasing and many Americans cannot afford coverage. Patients complain they cannot access physicians and services, and physicians complain they are prevented from providing quality care," said Dr Jensen.

The impact on nutrition support has been profound. Classic multidisciplinary teams have declined in number – staff fired or moved to other jobs. "We have been decimated. For those who remain, there are fewer staff trying to do more with less. There is less time for teaching and research, fewer participants in professional societies and fewer health professionals choosing nutritional support as a career," he said.

The problems were exemplified by a recent case: a 32-year-old man with Crohn's Disease; short bowel with high output ileostomy. He was admitted to hospital with dehydration and malnutrition. Coverage (reimbursement) for home TPN was rejected by the Health Medical Organisation (HMO) because 'the patient was also eating'. A direct approach to the HMO medical director was needed to sort out the problem.

However, despite the problems Dr Jensen felt that managed care could offer some advantages, with opportunities to improve screening, high risk case management, prevention and education, and to raise standards of nutrition care. Managed care databases offered unique research potential. He cited the example of The Geisinger Healthcare Model which is currently collecting data from a network of 1200 physicians serving 38 counties in Pennsylvania. Nutrition screening data has been collected on 21,000 elderly individuals who are being followed.

"Managed care programs can also target members with preventive and educational efforts that promote sound nutrition and exercise, using initiatives such as health fairs, sponsored group walks, mailings, web sites and clinic handouts, he said.



## Poster round up Part II - a selection from ESPEN 2001 posters

### Antioxidants may promote wound healing

Dietary supplementation with antioxidants appears to promote wound healing, according to an animal study presented by Brazilian researchers.

They fed 36 male Wistar rats with a standard diet supplemented by oral gavage with alpha-tocopherol, beta-carotenoid or vehicle only, and coconut oil for 14 days at doses representing 5-20 times their nutritional needs. Each animal underwent subsequent tissue injury by 2cm paravertebral skin incision under anaesthesia. The breaking strength was determined by tensiometry and collagen fibres by photofluorometer, and malondialdehyde (MDA) and plasma total peroxide (TPO) were measured colorimetrically.

The authors report that MDA and TPO were significantly higher in the animals submitted to tissue injury compared to others. However, those supplemented with alpha-tocopherol and beta-carotenoids had lower MDA levels compared to the coconut oil group. In addition, breaking strength and relative fluorescence were significantly greater for vitamin supplemented groups.

The authors postulate that the mechanism of action of these agents might be associated with their antioxidant properties.

### Infections continue to plague HPN patients

Since its inception in the early 1970s, home parenteral nutrition (HPN) has been a life-saving means of providing nutrients to patients with intestinal insufficiency. Although in the early years, Crohn's disease or mesenteric infarction represented the major diagnoses, more recently the proportion of patients with cancer has increased significantly, especially in the United States. Infections remain the most common complication of HPN, particularly in the paediatric population.

In order to study the long-term infectious complications of HPN patients, 435 consecutive HPN patients were followed prospectively between 1969 and 2001 by researchers at the Memorial Sloan-Kettering Cancer Centre in New York. The study, which represents the largest reported single cancer institution population of patients on HPN, found that patients received HPN for, on average 403 days, with a maximum of 23.5 years. In all, 35% of patients experienced at least one bacteraemic episode while on HPN.

Rate of utilization of central venous catheters was on average 1.9 per patient – one-third of central venous catheters were discontinued due to infection. Paediatric patients experienced significantly higher rates of bacteraemia and used significantly more central venous catheters than adult patients.

### Supplements may boost immune system of elderly

Impaired nutritional status, which is often seen in the elderly results in metabolic and clinical alterations of immunity. A randomised double-blind placebo-controlled trial suggests that nutritional supplementation in the elderly may reduce this decline in immune function as measured by T-cell lymphocytes.

The 22 semi-institutionalised elderly patients received a liquid nutritional supplement or non-caloric placebo for six months. The supplement was provided in a 125ml volume to be taken twice daily between regular meals, and contained 0.5 to 1 times the RDA of vitamins and minerals with enhanced levels of antioxidants.

Fasting venous peripheral blood samples were taken at 0 and 6 months for analysis of vitamin levels and T-cell proliferative response. The authors observed a decline in T-cell proliferation in the placebo group, with a significant treatment effect resulting in no decline in the supplemented group. However, IL-2 production was not significantly affected, possibly due to a large variation in this parameter.



## Poster round up Part II - a selection from ESPEN 2001 posters

### Nutritional support boosts mood

Malnutrition and severe illness are associated with marked disturbance in mood, reported J. Field and colleagues, University Hospital, Queen's Medical Centre, Nottingham, UK. Their study also showed that mood disturbances can be rapidly improved with nutritional support.

The study used the Profile of Moods States (POMS) questionnaire to measure changes in mental function in 19 patients with gastrointestinal failure who were receiving nutritional support and associated care. Patients underwent psychological assessment on admission to the Clinical Nutrition Unit, and eight days later. Nutritional support produced highly significant improvement on all the POMS scores, including tension, depression, anger, vigour, fatigue and confusion.

"These functional changes are easy to measure in the clinical context and improve rapidly in response to nutritional support and associated measures. They are useful and sensitive measures of outcome in patients requiring nutritional support," concluded the Nottingham researchers.

### Cardiac function suffers when the patient is undernourished

Previous studies have shown severe depletion of muscle mass in malnourished patients. Now Spanish researchers have taken the story a step further with functional study of cardiac muscle in patients with eating disorders.

A. Miján and colleagues, Departments of Nutrition, Cardiology and Psychiatry, Burgos, Spain, performed a cross-sectional study of 45 eating disorder patients aged 13 to 43. Nutritional, demographic, cardiac, and Doppler-echocardiography parameters related to cardiac muscle were recorded. Multifactorial regression analysis confirmed an inverse relationship between BMI and cardiac function.

"Undernutrition as measured by body mass index is closely related to cardiac function as measured by ejection fraction. A fall in two BMI units was associated with a 1.1% reduction in ejection fraction," the authors concluded.

### Prevalence of liver abnormalities in HPN clarified

Although long term home parenteral nutrition has markedly improved quality of life and survival for patients with intestinal failure, the epidemiology of deranged liver function tests in adult HPN patients has not yet been fully clarified.

Doctors at the Intestinal Failure Unit at Manchester's Hope Hospital performed a retrospective analysis of case notes from 107 patients on HPN. They defined deranged liver function tests as any biochemical parameters of LFT 1.5 times above the reference range at least 6 months after initiation of HPN.

The prevalence of deranged liver function tests was found to be 39% but none of the patients developed complicated or end stage liver disease. The authors point out that parenteral lipid and dextrose administration per se were unlikely to be important factors for deranged LFTs. They suggest that the cause of hepatic dysfunction could be due to higher parenteral caloric intake from glucose in patients with small bowel length of less than 60cm.



# ESPEN 23<sup>RD</sup> CONGRESS DAILY NEWS

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XXIII<sup>RD</sup> ESPEN CONGRESS • 8-12 SEPTEMBER 2001 • MUNICH GERMANY

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