PMO-040 THE DEVELOPMENT AND VALIDATION OF A NUTRITIONAL PRIORITISING TOOL FOR USE IN PATIENTS WITH CHRONIC LIVER DISEASE

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Introduction Patients with cirrhosis are frequently malnourished and this has a detrimental effect on outcome in terms of complications, survival after liver transplantation and overall liver-related mortality. The detection of malnutrition and its active management is, therefore, pivotal to these patients' well-being and survival. The aim of this study was to design and develop a simple, nutritional screening tool for use in patients with cirrhosis -The Royal Free Nutritional Prioritising Tool (RFH-NPT)—and to validate its use against the Royal Free Hospital Global Assessment (RFH-GA) which is the accepted gold standard for nutritional assessment of cirrhotic patients in the UK.

Methods The RFH-NPT was devised and piloted; interobserver performance agreement was excellent. Validation was undertaken in a cohort of patients with cirrhosis on transplant units throughout the UK and Southern Ireland. Patients' nutritional status was determined and categorised, by nursing staff, using the RFH-NPT (completion time 3 min). The results were compared with the categorisation of nutritional status determined by dietitians using the RFH-GA (completion time 45 min). The analysis of descriptive data, cross-tabulation, performance variables, 95% CIs and κ values were calculated using standard methods. κ Values were interpreted according to Altman, 1999.

Results The patient population comprised 133 patients with cirrhosis (98 men: 35 women; mean [range] age 56 [23–73] yr). Overall 49 (37 %) patients were classified, using the RFH-GA, as adequately nourished; 46 (35%) as moderately malnourished and 38 (29%) as severely malnourished. The RFH-NPT identified patients who were at high risk for malnutrition with a diagnostic sensitivity of 100% (95% CI 89 to 100) and specificity of 73% (95% CI 63 to 81) (κ value 0.41, 95% CI 29 to 53).

Conclusion The RFH-NPT is a simple, quick and validated method for identifying patients with cirrhosis who at high risk for malnutrition. Further multicentre validation is warranted.

Abstract PMO-040 Figure 1

Competing interests None declared.

PMO-041 INVESTIGATING BARRIERS TO NUTRITIONAL SCREENING BY NURSES AND WARD MANAGERS ON LIVER TRANSPLANT UNITS

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Introduction The incidence of malnutrition remains high and is often undetected in hospitals. Patients with cirrhosis are often malnourished and this has a significant negative effect on outcome; its early management is therefore vital. Nutritional screening in the UK is generally undertaken by nursing staff. No surveys have been undertaken to assess the relationship between nutritional knowledge/attitudes and the practice of nutritional screening among nursing staff nor have attempts been made to identify any barriers to screening. A survey of nursing staff and ward managers on the liver transplant centres in the UK was, therefore, undertaken.

Methods A questionnaire was sent to all nursing staff on five of the UK liver transplant units. The 20 questions accessed three domains of information (1) general and specialist nursing education and training; (2) nutritional training; experience, practise and views of nutritional screening; and (3) potential barriers to nutritional screening. A yes/no quiz comprising 30 questions of varying complexity designed to assess knowledge of nutritional principles was also included. A separate questionnaire was sent to the ward managers. It comprised 27 questions relating to key factors which might affect the completion of nutritional screening tools by nursing teams, including information on nurse:bed ratios, nursing skill mix, staff sickness levels and use of bank/agency nursing staff. Details of managers' length of service and training in the nutritional aspects of patient care were also explored.

Results Response rates varied between centres but averaged 60% (n=69). The majority of nurses (60%) reported that 75–100% of patients on their wards are actively screened. The major obstacles to screening were lack of time (49%), lack of skilled staff (17%) and the perception that screening would be futile in patients who did not appear malnourished (11%). There was no relationship between nutritional screening level and nurses' experience of working in the NHS or on a specialist liver unit, the amount and type of nutritional training they had received, ward staff resourcing/time pressures, their nutritional quiz score, the size of the ward or the nurse:bed ratio. However, centres with less experienced ward managers reported higher usage of bank/agency staff and lower nutritional screening levels.

Conclusion Many of the factors which it was intuitively felt might affect nutritional screening levels by nurses did not do so. Instead the role of the ward managers proved key in this respect. Thus, nutritional screening by nursing staff could be improved by (1) raising the priority of nutritional education with ward managers; and (2) supporting less experienced ward managers in their handling of staff sickness levels to reduce bank/agency staff levels.

Competing interests None declared.

Clinical practice/guidelines (nutrition)

PMO-042 COST-EFFECTIVENESS ANALYSIS OF IMMUNONUTRITION FOR UPPER GASTROINTESTINAL CANCER PATIENTS UNDERGOING SURGERY IN BRITISH HOSPITALS

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Introduction Immunonutrition (IN) containing arginine has been demonstrated to decrease complications as well as length of hospital

stay in surgical patients in numerous meta-analyses of randomised clinical trials (Drovers *et al* 2011; Cerantola *et al* 2011). Its impact on hospital costs has already been assessed in gastrointestinal (GI) cancer surgery based on Swiss, US, Italian and German hospital costs (Mauskopf *et al* 2011; Chevrou-Séverac *et al* 2011; Braga *et al* 2005; and Senkal *et al* 1999). The objective of this study is to assess whether IN is a cost-effective option in hospitals of the British National Health System (NHS) for upper GI cancer patients undergoing surgery.

Methods Based on the Cerantola *et al* (2011) meta-analysis, the RR of complications of IN vs control were computed. Hospital cost and length of hospital stay (LOS) of upper GI cancer patients undergoing major surgery were retrieved from the HRG (healthcare resource group) database of 2010. Then an average cost per stay for patients presenting with post-surgical complications and without were computed. Two approaches to compute the difference in costs per patient were performed: one based on cost of stay related to the LOS of patients of each group (IN vs control); and another based on a weighted cost of stay link to the rate of patients with and without complications of each group.

Results The RR of complications was 0.69 (95% CI 0.58 to 0.83) for pre-operative use of IN, demonstrating a decrease in post-operative risk of complications due to the use of IN. When running cost-effectiveness analysis, the NHS recommends using the average cost per day of £675. This value was used into the LOS approach. The HRG costs of stay were calculated for different upper GI cancers (oesophagus, small intestine, stomach, duodenum, liver and pancreas) and different level of complications, ranging from £968 to £2395 per hospital stay. When considering the LOS approach, £1585 were saved per patient-stay. When considering the complication approach, savings reached £176 per patient for patients with oesophagus cancers, £201 for stomach and duodenum cancers, £394 for small intestine cancers, and £608 for pancreas cancer.

Conclusion Costs of IN are more than offset by the savings linked to decrease in LOS and to avoided costs of treatment for complications. Thus, as in the USA, Switzerland, Italy and Germany, in the NHS hospital setting, IN is a cost-effective and cost-saving nutritional intervention.

Competing interests H Chevrou-Severac Employee of: Nestle Health Science, L Weijers Consultant for: Nestle Health Science, I Eijgelshoven Consultant for: Nestle Health Science.

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PMO-043 OUTCOME OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY—HOW COMPLIANT WE ARE WITH BSG GUIDELINES?

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Introduction Maintenance of enteral nutrition is considered to be beneficial for patients in whom the oral access has been lost. For long term tube feeding, PEG (percutaneous endoscopic gastrostomy) placement is of recognised advantage. A significant number of PEG tubes continue to be placed in patients for whom the benefits are questionable which account for significant procedure related morbidity and mortality. A better understanding of patient selection, designated multi-disciplinary framework and compliance with BSG guidelines are thought to improve outcome and minimise morbidity and mortality.

Methods We evaluated our practice of PEG tube placement against BSG guidelines in terms of patient selection, assessment, outcome

and complications. It was a retrospective study. Medical record of patients who had PEG tube placement between February 2010 and March 2011 were studied. PEG related information was collected from endoscopy database and hospital electronic resources. Data were collected regarding pre-procedure clinical assessment, blood investigations, MRSA status, family involvement in decision making, underlying co-morbidities, post PEG care, early and late complications and 30 days mortality.

Results 52 patients aged 25–90 yrs (median age=78, F=28) were identified. 60% of the patients were assessed by a member of gastroenterology team prior to the procedure. Indications of PEG recorded were stroke (71%), pharyngeal cancer (10%), unsafe swallow (10%) and neurological condition (9%). Clotting was checked in 73% and MRSA status in 64% of cases. Family was involved in decision making in 73% of cases. 86% were reviewed by dietician pre or post procedure. 33% had early complications (within 1 week of the procedure, majority were pneumonia) while 12% had late complications (>1 week after PEG). 30 days mortality was 33% and 4% died within 2 days of the procedure. Overall compliance with BSG guidelines was unsatisfactory.

Conclusion PEG tube provides a durable access for enteral nutrition, whether or not it improves outcome, remains a matter of much debate. Guidelines have been developed by BSG to assist physicians in decision-making in order to minimise the morbidity and mortality associated with this procedure. A dedicated multi-disciplinary PEG team and better compliance with these guidelines would be an important strategy to improve outcome and minimise complications.

Competing interests None declared.

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PMO-044 MORTALITY POST PERCUTANEOUS ENDOSCOPIC GASTROSTOMY INSERTION: A ROOT-CAUSE ANALYSIS

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Introduction Meta-analysis has demonstrated a 19% 30-day mortality following Percutaneous Endoscopic Gastrostomy (PEG) insertion.¹ The 2008 National Confidential Enquiry into Patient Outcome and Death (NCEPOD)² retrospectively audited inpatient death, demonstrating poor patient selection and use of multi-disciplinary assessment. The figures demonstrated the need for endoscopy units to engage in regular audit of PEG insertion and suggested reviewing all cases of mortality within 30 days of procedure.

Methods A root-cause analysis of mortality after inpatient PEG insertion was undertaken from over 1 year from June 2010 to May 2011 at West Middlesex University Hospital, London.

Results 45 patients underwent PEG insertion with an average age of 72.66 years (range 33–100; 19 females; 26 males). Indications were neurological in 96% (43). Six were for PEG re-insertion following tube failure. Most were American Society of Anaesthesiologists (ASA) grade II (56%). The one ASA IV case was an intensive care unit inpatient. The 30-day mortality was 20%, with an average age of 82.9 years and average survival of 14.4 days. All indications for insertion were for poor swallow post stroke. The majority of patients were ASA-II. All causes of death were all attributed to pneumonia on their death certificates. None of the deaths were procedure related. However, these patients demonstrated multiple co-morbidities and a poor functional baseline level pre-procedure. 20