

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