Serum Biochemical Markers may predict Post- Percutaneous endoscopic gastrostomy (PEG) mortality: 3 years' experience in a single stroke center in UK

E. M .O .E Gadour 1,*, M. A. Jan 2, M. Madalinski 2, S. Khalid 2

1Gastroenterology, Fairfield General Hospital, 2Gastroenterology , Fairfield General Hospital, Manchester, United Kingdom

Abstract

Introduction

Percutaneous endoscopic gastrostomy (PEG) is a commonly used method to insert the gastrostomy tube in patients who experience difficulties swallowing but their guts are working as expected. The complications of these methods have been given a deeper insight especially when it is applied to the patients who are debilitated and fragile. For a clear analysis of the scenario, we have reviewed the mortality rates between 1st Jan 2015 and 1st Jan 2018 at Fairfield General Hospital. The assessment of the of the outcome of PEG tube placement for inpatient was carried out based on the mortality, morbidity as well as survival that is long term. Many variables have been taken into consideration in this study including serum CRP, serum Albumin level, pervious medical problems like Dementia, Atrial fibrillation, severity of the stroke using NIHSS score as well as development of aspiration pneumonia afterwards.

We have also reviewed our current practice against the BSG Antibiotics recommendation for PEG insertion.

Methods

An analysis of the primary cause of mortality after the patients underwent PEG insertion was undertaken for about three years between 1st Jan 2015 and 1st Jan 2018 at Fairfield General Hospital endoscopy unit for clarity and correctness purposes. We studied the best time for PEG insertion as well we patient selection. We used some serum blood tests (CRP and Albumin level) as prognostic factors. We involved variety of patients with difficulty swallowing including dementia patients. The data has been collected from patients' record using 'Unifsoft' and clinical letters as well as the endoscopy unit diary.

Results

The sample size for the experiment was 68 patients who comprised of both male and female genders, 42 of them were males, and 26 were females which represented 62% and 38% respectively. The majority of the patients (63) had antibiotics given before the PEG insertion 92% as per the BSG guidelines where 7% did not have antibiotics. Among patients who did not have antibiotics before the procedure 40% died within 6 months, 40% still alive (one year after the procedure) and 20% died within one month. All he patients who died after the procedure had significantly high serum CRP level with low serum Albumin level. Patients with dementia were 11% and 87.5% of them were alive 12 months after the PEG insertion. Around 33.8% had severe stroke yet 69.5% of them had good outcome. Whereas patients who had PEG inserted due to non-stroke related dysphagia 33.8% had slightly poorer outcome with only 52% survived the first 12 months. Few patients experienced aspiration pneumonia after PEG insertion 23.5% and there were no Endoscopic complications. When the intention-to-treat analysis applied on the patients above 65

year and below 65 of the sample size, it was realized that the one year survival rate was 20% and 80% respectively.

Conclusion

From the sample size analysis, it is evident that the endoscopy team at Fairfield Hospital are following the BSG guidelines for antibiotics usage before PEG insertion 92%. The outcome is better when PEG inserted within four weeks from the Stroke if it was inserted for Stroke. The severity of the Stroke was not directly related to the mortality rate after PEG insertion. Dementia should not be a contraindication for PEG insertion. The mortality is higher in the patients who had PEG inserted for non-stroke related dysphagia. CRP and Albumin level may be considered as part of selection as they can predict the pot-PEG mortality. More researches should be conducted to see whether a scoring system for patient selction for the PEG insertion should be developed using different parameters and biochemical markers.

Keywords: Percutaneous endoscopic gastrostomy (PEG), aspiration pneumonia , NIHSS score, CRP and Albumin level.