Percutaneous Endoscopic Gastrojejunostomy Insertion for Duodopa Infusion is a Safe and Effective Intervention for Advanced Parkinson's Disease in a Regional, Rural and Remote setting – a Retrospective Audit of 9 years of Experience in a Single Regional Centre in North Queensland



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Background

Management of Parkinson's disease (PD) is challenging in advanced stages when conventional oral levodopa therapy is no longer effective or deep brain stimulation (DBS) is clinically unsuitable or geographically inaccessible for this group of frail patients. People living in regional and rural areas in Queensland have a disproportionately higher incidence of disease than people living in metropolitan areas and less access to contemporary treatment options. Duodopa (Levodopa Carbidopa) intestinal infusion via percutaneous endoscopic gastrojejunostomy (PEGJ) tube is a locally accessible and effective therapy for neurological improvement and improved quality of life in advanced PD.

The Neurology-Gastroenterology partnership formed in 2014 in Townsville University Hospital represented the first non-metropolitan centre in regional Australia to provide local access to continuous intestinal duodopa gel infusion for patients with advanced PD. Introduction of duodopa infusion in 2014 provided equity of access to life-changing treatment for regional patients with advanced PD eliminating the need for challenging or unfeasible travel to metropolitan centres. We have previously reported early safety data.

Methods

We performed an updated retrospective review of the overall safety and device related complications of PEG-J procedures performed in this group of frail patients by a single operator under propofol sedation or general anesthesia from 2014 to 2023. These data are the largest series reported from a regional Australia centre with a total of 149 procedures for 61 patients with advanced PD and includes 2 patients with previous bariatric surgery.

Conclusion

1. The safety profile and device-related complications of PEG-J procedures in this group of frail patients with advanced Parkinson's disease in our regional centre were comparable with outcomes reported in large metro centres.

2. Continuous intestinal duodopa infusion improves neurological symptoms and quality of life in patients with advanced Parkinson's disease and these data show that the overall benefit associated with PEG-J procedures is balanced by an acceptable procedural risk and complication profile in this regional and rural patient population.

Results

From 2014 to 2023, a total of 149 PEG-J procedures were performed for 61 patients with advanced PD for administration of duodopa. The mean age was 69 years, with Male: Female ratio of 62:38. The mean American Society of Anesthesiologists score was 3, and the mean body mass index was 24.

The most common indication for repeat gastrojejunostomy was routine tube change due to longevity and deterioration of the hardware after 12-24 months, indicating this group of ASA grade 3 frail patients thrive on this treatment.

The most common complications were PEG site superficial infection (37%) and repeat jejunal tube insertion due to tube dislodgement or blockage (45% of patients), and severe adverse events were rare (3.2%). 11 patients were on single agent antiplatelet medication and 9 patients on anticoagulants, but no immediate or delayed significant bleeding complications were recorded in all procedures.

The longest surviving patient has had intestinal duodopa for 8 years and 6 months. At the time of current report, 42 patients were still alive, 4 reverted to oral therapy, and 1 is on DBS. 2 out of 61 patients (3.2%) died within 30 days from causes unrelated to PEG-J insertion. mostly due to progressive PD. 19 patients have died from causes unrelated to PEG-J insertion.

50 45% 40 37% 30 20 14.8% 10 3.2% 0 Tube Superficial Serious Dislodgement **PEG-J** site Others Complications or Blockage infection

Figure: Adverse Events Post PEG-J Insertion