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Timing and Outcomes of Percutaneous Endoscopic Gastrostomy in Parkinson's diase: A Systematic Review of Observational Studies

Au-jin Wang, MD[1], Gi-Wook Kim, MD, PhD[1,2], Yu Hui Won, MD, PhD[1,2], Sung-Hee Park, MD, PhD[1,2], Myoung-Hwan Ko, MD, PhD[1,2], Jeong-Hwan Seo, MD, PhD[1,2] Da-Sol Kim, MD, PhD[1,2]

[1] Department of Physical Medicine and Rehabilitation, Jeonbuk National University Medial School, Jeonju, Korea

[2] Research Institute of Clinical Medicine, Biomedical Research Institute of Jeonbuk National University Hospital

Introduction

- **Percutaneous endoscopic gastrostomy (PEG) use in advanced Parkinson's disease(PD)**
- Indicated for progressive dysphagia and malnutrition
- **Timing and outcomes remain inconsistent across real-world studies**

Method

- **Databases**: PubMed, Embase
- **Records screened**: 91 (PubMed), 236 (Embase)
- **Included studies**: 7 observational studies(registry, retrospective cohorts, administrative databases)
- **Extracted data**:
  - PEG practice patterns
  - Timing proxies (emergency vs elective, disease duration/stage)
  - Outcomes: mortality/survival, aspiration pneumonia, hospitalization, PEG-related complications
- **Analysis**:
  - Structured narrative synthesis
  - No meta-analysis due to heterogeneity(populations, denominators, outcome definitions)

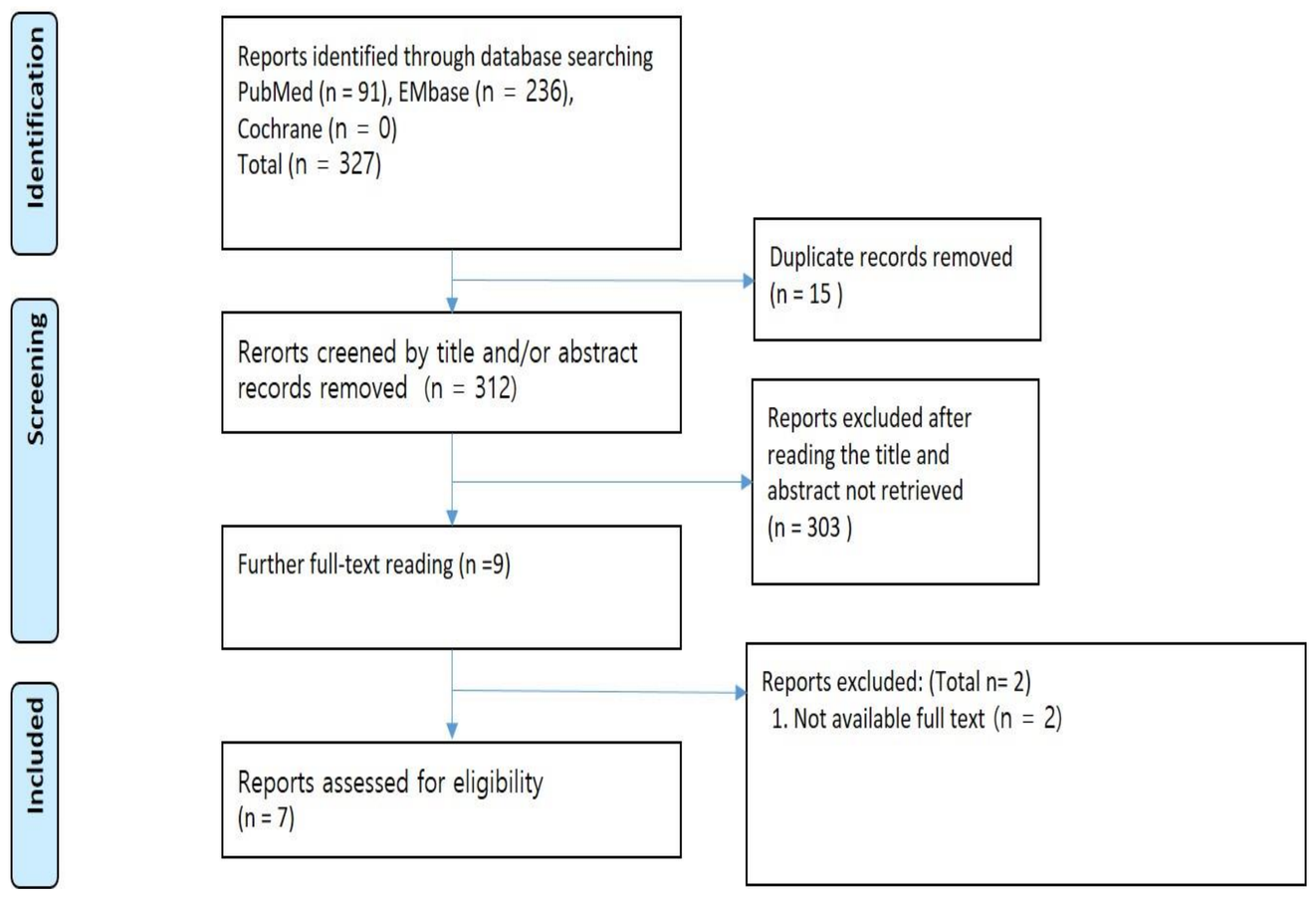


Figure 1. PRISMA flow diagram

Result

- PD was associated with an **increased risk of adverse outcomes during hospitalization**, including **PEG placement (OR 2.00), aspiration pneumonia (OR 1.17), and in-hospital death (OR 1.11)** (George et al., 2023) (Figure 1)
- **PEG rates declined from 19.7 to 13.8 per 1,000 admissions** over time (Kim et al., 2021) (Figure 2)
- PEG was performed **during emergency admissions in 82%** of cases (Brown et al., 2020) (Figure 3)
- **Median survival** after PEG was **186–422 days** (Marois et al., 2017; Brown et al., 2020) (Figure 4)
- **Aspiration pneumonia** occurred in **22% after PEG** (Brown et al., 2020) (Figure 5)

FIGURE 1. INCREASED RISK OF ADVERSE OUTCOMES IN PD HOSPITALIZATION

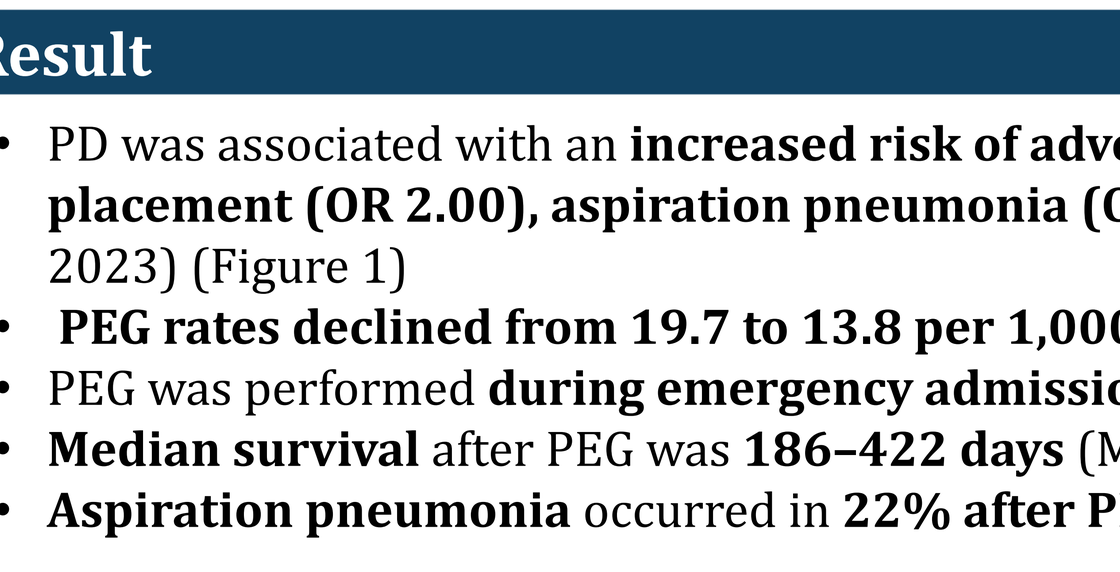


FIGURE 2. PEG PLACEMENT RATES PER 1,000 HOSPITAL ADMISSIONS IN PD OVER TIME

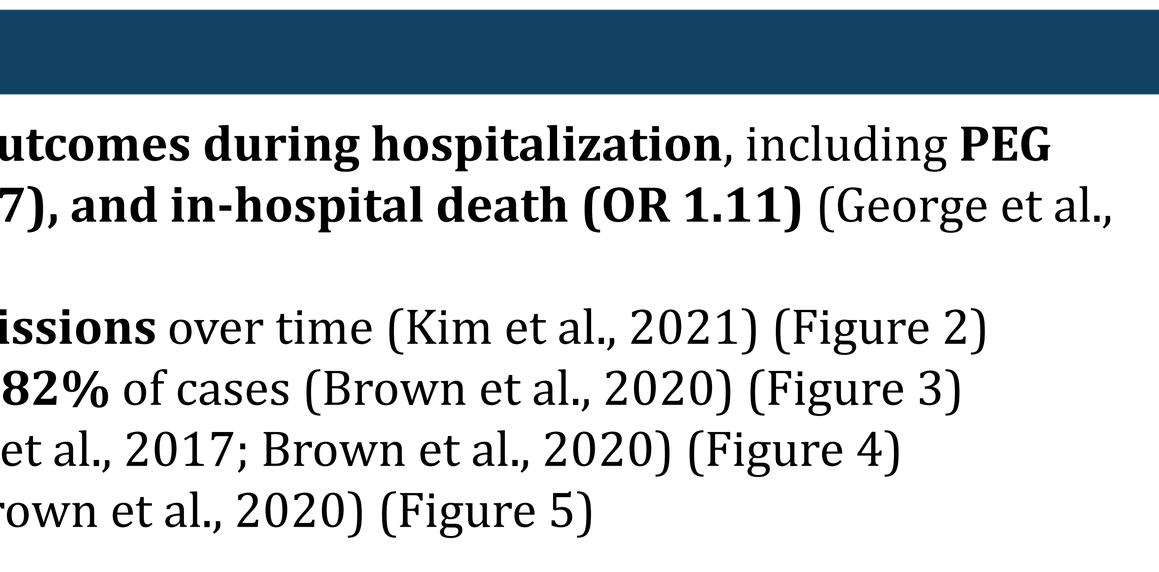


FIGURE 3. TIMING OF PEG PLACEMENT IN PD

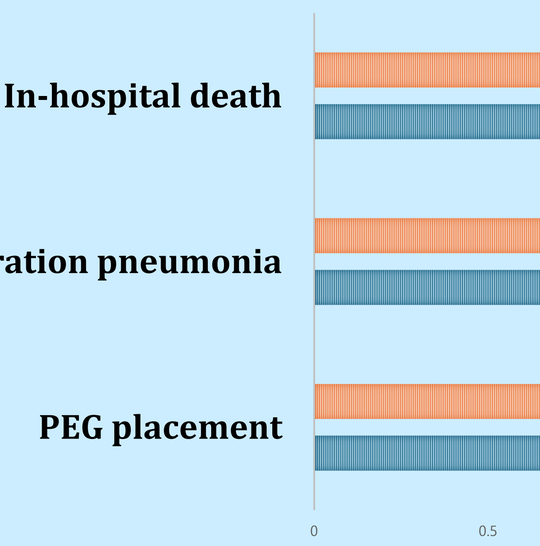


FIGURE 4. MEDIAN SURVIVAL AFTER PEG PLACEMENT IN PD

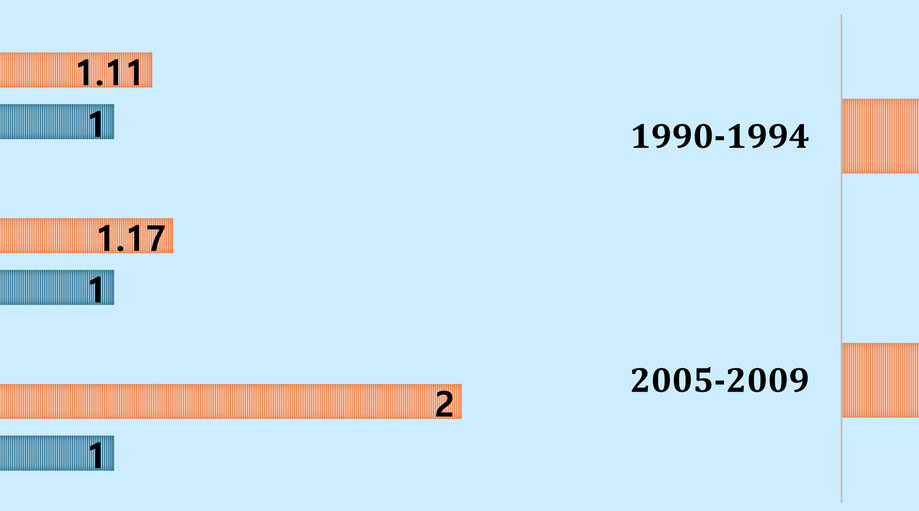
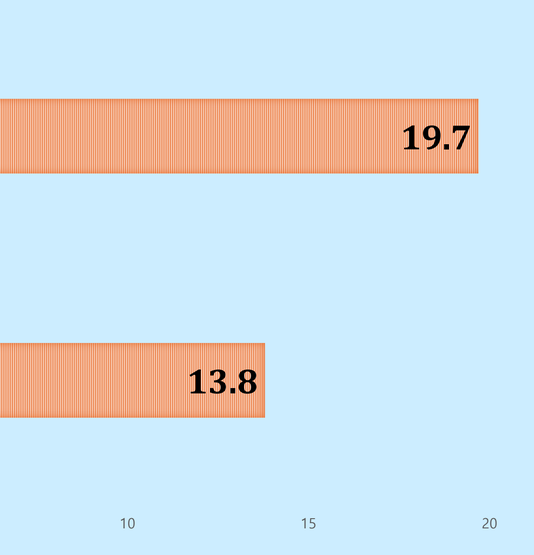


FIGURE 5. INCIDENCE OF ASPIRATION PNEUMONIA FOLLOWING PEG IN PD



Conclusion

- PEG in PD is frequently performed during acute admissions
- Associated with significant respiratory morbidity and early mortality
- Evidence is limited by lack of standardized timing definitions, inconsistent outcome reporting

→ **Future prospective multicenter studies with harmonized definitions are needed**