

**Percutaneous Endoscopic Gastrostomy (PEG)
indications, complications, and effect
on nutritional status on elderly patients
in a tertiary care hospital in the Philippines
from January to December 2004**

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OBJECTIVES:

To determine the indications and number of PEG insertions in elderly patients admitted at St. Luke's Medical Center for the year 2004

To determine the patient profile, condition or disease, co-morbidities, and nutritional status on admission, which would be the reflection of the standard of care given to these patients.

MATERIALS AND METHODS:

- **60 years old and above**
- **PEG insertion January - December 2004,**

**Hospital Medical Records Section
Endoscopy Unit - Institute of Gastroenterology SLMC**

- **Baseline demographic data like:
age, sex, anthropometric data**
- **The nutrition related data was obtained from the
nutrition database of the Nutrition Support Services
of the hospital. Presenting symptoms and co-
morbidity were reviewed and recorded.**

MATERIALS AND METHODS:

➤ Data analyzed

- patient profile:**

 - age**

 - sex**

 - number of co-morbidities**

 - BMI**

OUTCOME MEASURES

- adequacy of feeding**

- nutritional status**

- number of complications**

- mortality**

MATERIALS AND METHODS:

- **Statistical analysis: Central tendencies (means, median)**
- **z test for independent proportions**

NUTRITIONAL STATUS

BMI: World Health Organization (WHO)

< 18.5	– underweight
18.5 to 25	– normal,
25.1 to 30	- overweight
> 30	– obese.

PATIENTS

117 PEG patients January – December 2004



44 geriatric patients
median age = 84 years (range 61-101)

21 (47.7%) males
23 (52.3%) females

80 -89 years old = 48%
70 -79 years old = 18%
60 -69 years old = 16%
90 – 99 years old = 16%
101 years old = (2%)

**Table 1: Indications for PEG, Geriatric,
St. Luke's Medical Center**

PEG Indications	Number
Dysphagia	21 (47.7%)
NGT > 3 weeks	10 (22.7%)
Chewing problem	8 (18.18%)
Enteral access	5 (11.36%)
Total	44

Table 2: Complications related to PEG insertion

Complications	Number
Wound infection	5 (22.7%)
Diarrhea	4 (18.2%)
Aspiration pneumonia	3 (13.6%)
Vomiting	2 (9.1%)
Peritonitis	1 (4.5%)
Delayed tube feeding	1(4.5%)
Re-admission	2 (9.1%)
Mortality SLMC	2 (9.1%)
Mortality Home	2 (9.1%)
Total	22

**Table 3 – Disease/Condition when PEG was inserted
Geriatric St. Luke’s Medical Center**

Disease/Condition (N = 44)	Number
Gastrointestinal	11 (26.2%)
Neurologic	10 (23.8%)
Cardiovascular	6 (14.3%)
Infectious	6 (14.3%)
Endocrine	2 (4.8%)
Malignancy	2 (4.8%)
Nephrologic	2 (4.8%)
Pulmonary	2 (4.8%)
Trauma	1 (2.4%)

Table 4 – Disease/Condition of PEG patients, St. Luke’s Medical Center

Disease/Condition	Geriatric	Percent	Over-All	Percent
Gastrointestinal	11	26.2%	14	19.4% *
Neurologic	10	23.8%	34	47.2% **
Cardiovascular	6	14.3%	6	8.3%
Infectious	6	14.3%	6	8.3%
Endocrine	2	4.8%	2	2.8%
Malignancy	2	4.8%	4	5.6%
Nephrologic	2	4.8%	3	4.2%
Pulmonary	2	4.8%	2	2.8%
Trauma	1	2.4%	1	1.4%
Total	42	100.0%	72	100.0%

* $p > 0.05$ over-all vs. geria; ** $p < 0.05$ over-all vs. geria; z - approximation

**Table 5: Co-morbidities in PEG patients,
St. Luke's Medical Center**

Co-morbidity	Number	Percent
Hypertension	54	28.9%
Diabetes mellitus	43	23.0%
Infection	26	13.9%
Coronary artery disease	23	12.3%
Pneumonia	14	7.5%

Table 6: Age distribution and nutritional status (BMI) after PEG insertion, Geriatric, St. Luke's Medical Center

Age Range	Underweight	Normal	Overweight	Obese	Total
60-69 yrs	14.3%	14.3%	42.9%	28.6%	7
70-79 yrs	12.5%	62.5% **	25.0%	0.0%	8
80-89 yrs	28.6%	52.4% *	14.3% ***	4.8%	21
90-99 yrs	0.0%	71.4%	28.6%	0.0%	7
100+ yrs	0.0%	100.0%	0.0%	0.0%	1
Total	18.2%	52.3%	22.7%	6.8%	44

* $p > 0.05$ normal > underweight; ** $p < 0.05$ normal > underweight;

*** $p < 0.05$ normal + overweight > underweight; z-approximation

- **The duration of follow up of these patients was within 6 months (52%) to one year (48%)**
- **Nutritional status outcome as measured by the Body Mass Index (BMI) showed that for all patients 52.3% had normal nutritional status, 22.7% are overweight, 6.8% are obese, and only 18.2% are underweight**
- **Adequate intake was achieved in 81.8%(significant) of the over-all geriatric population.**

- **Two patients (2/44 or 4.5%) died during hospitalization due to sepsis and acute myocardial infarction**
- **while another two (2/44 or 4.5%) died at home due to worsening status and pneumonia**
- **The PEG is not associated with these outcomes**
- **The rest or 91% of the patients are still living during the study period**

Conclusion:

- ★ **PEG placement in geriatric patients has improved nutrient intake achieving an 81.8% well nourished population, thus showing it to be a valuable tool in the nutritional management of the elderly patient**
- ★ **The associated complication rate is similar to the reported Asian and non-Asian data which is low**
- ★ **PEG insertion is relatively safe among elderly patients**