Indications for and conduct of
Enteral Nutrition
PEG pros and cons

Paula Ravasco  p.ravasco@fmedicina.ulisboa.pt
Laboratory of Nutrition
Faculty of Medicine of the University of Lisbon
Medical School of Lisbon
Portugal
Artificial Nutrition in advanced cancer

Difficult decision...

What 'ingredients' go into making these decisions?
Enteral Nutrition

- **Recommended:**
  - severe dysphasia
  - severe anorexia
  - decreased food intake

- **Clinical indications:**
  - head & neck / esophagus tumours
  - inoperable *fistulae*
  - esophageal obstructions

(Boyd, 1994)
<table>
<thead>
<tr>
<th>STRONG</th>
<th>Incurable patients: screening and assessment</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Routinely screen advanced, incurable cancer patients - whether receiving or not receiving anti-cancer treatment - for inadequate nutritional intake, weight loss and low body mass index, and if found at risk, to assess these patients further for both treatable nutrition impact symptoms and metabolic derangements.</td>
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</table>

| Questions for research | Effects of malnutrition screening programs combined with multidisciplinary interventions on QoL in incurable cancer patients |
Percutaneous Endoscopic Gastrostomy (PEG)

1980 - Gauderer

Gastrostomy via percutaneous technique
Percutaneous Endoscopic Gastrostomy (PEG)

- PEG became the preferential enteral nutrition route
- In 2003 - 55000 PEG / year in USA
Relevant Factors

• Effect on life expectancy
• Effect on QoL

Values/Beliefs:
  – Patients (may or may not be known)
  – Family
  – Clinical staff (physicians, nurses, speech therapists etc.)
  – Social/cultural belief

• Healthcare system
  – Effect on workload
  – Fear of recrimination

• Ethical
<table>
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<td>Nutritional interventions in patients with incurable cancer after weighing together with the patient the expected benefit on QoL and survival vs the burden associated with nutritional care.</td>
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PEG Indications

- Neurological swallowing impairments
- Stroke
  - Dementia
  - Amyotrophic Lateral Sclerosis
  - Neuromuscle diseases
- Head and neck cancers
- Oesophagus cancers
Who gets PEG tubes?

• Top three
  – Organic, neurologic/dementia 28.6%
  – Stroke 18.9%
  – Head and neck cancer 15.7%

• Procedural complication rate 4%

• Short-term mortality 23.5% died during hospitalization

• Median survival 7.5 months

Cancer and Artificial Nutrition

Two separate issues:

- Mechanical blockage or inability to eat
- Cancer cachexia/anorexia syndrome
Mechanical Blockage/Difficulty Eating in Cancer

Bypassing obstruction indicated in

- Early disease states
- High functional status
- Hunger and thirst present
- Temporary problem (ex. severe oesophagitis due to chemotherapy and radiotherapy)
Cancer Anorexia/Cachexia Syndrome

• Mediated by tumor-associated cytokines (TNF), IL-1, IL-6, PIF, LMF)
• Body shifts to catabolic state
• Significant physiologic differences from starvation
• Little evidence on enteral feeding (or TPN) effective in:
  – Improving functional status
  – Other quality of life measures
  – Prolonging life
**Incurable patients: nutrition support**

**STRONG**

*Nutritional interventions should be used in patients with incurable cancer only after assessing secondary nutrition impact symptoms, cancer anorexia-cachexia, and realistic options of anticancer treatment. The expected benefit and time needed of nutritional interventions need to be defined first, it needs to outweigh the potential harm and the patient needs to wants it provided adequate illness understanding.*

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ESPEN Guidelines Cancer, 2016
PEG Pros

- Speed of insertion - 15 min
- No need for general anesthesia nor surgery
- Reduction in complication rate
- Reduction of mortality rate
PEG Pros

- Psychologically better accepted
- Reduction of accidental extubation
- No pharyngeal soreness
- No rapid material deterioration
- Similar rate of aspiration pneumonia
PEG Cons

- Abdominal wall infection / inflammation
- Tube displacement
- Bleeding in the gastrostomy location
- Peritonitis
PEG Cons

- Aspiration pneumonia
- Colic fistula
- Burried bumper
- Liquid drenage from the stomia
Life Prolongation – What is the Evidence?

Weakest Cons
Advanced, terminal illness – Dementia, Cancer

Strongest Pros
Acute, catabolic illness
Life Enhancement
What is the Evidence?

Weakest Cons

Patients with no hunger, poor baseline functional status, terminally ill

Strongest Pros

Patients with hunger, good functional status, mechanical barrier to eating
<table>
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<th>Very advanced terminal phase</th>
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**STRONG**

*In dying patients, treatment should be based on comfort. Artificial hydration and nutrition are unlikely to provide any benefit for most patients. However, a short and limited hydration can be used to rule out dehydration.*
<table>
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<td>Tube feeding may be done using naso-gastric tubes or PEG in radiation-induced severe mucositis or in head-neck/thoracic cancers with obstructive tumor masses.</td>
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<td>Patients should be encouraged and educated on how to maintain their swallowing function during EN.</td>
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Goals: patients living with advanced cancer

- Quality of life
- Independence
- Ability to perform activities of daily living
- Comfort
- Symptom relief rather than reversal of malnutrition and weight gain
SUMMARY

• Decisions regarding artificial nutrition and hydration are difficult for clinicians, patients and families

• The evidence base for PEG feeding in advanced, terminal illness is weak for both prolongation of life and improved QoL

• Decision making should incorporate patient and family values as well as informed consent regarding potential benefits, burdens and alternatives
Palliative care reduces morbidity and mortality in cancer

Gabrielle B. Rocque and James F. Cleary