Overview

- Consider the evidence
- Describe the practicalities
- Present some cases
Fistuloclysis/distal limb feeding

- Infusion of nutrients via a fistula, loop stoma or mucous fistula
- Sole source of nutrition or for gut trophic benefits
- Enteral nutrition and/or reinfusion of ostomy effluent (chyme)
  - Bolus or continuous delivery
- Originally suggested in 1964
When?

- When there is downstream bowel
- When it is safe to use the bowel
  - Always have a distal contrast study first
- When there is a clear goal
  - Nutrition support or trophic
  - Defined period or long term
- When the patient can cope with it physically & psychologically
  - Help in community limited
Potential benefits

- Intestinal adaptation
- Prevent atrophy of distal intestine
  - Trigger release of enteroendocrine hormones, including GLP-2
- Potential for improvement in LFT’s¹
  - Prevent cholestasis
- Reduction in upper fistula output
  - Inhibition of upper GI secretions²
- Reduction in PN requirements³

Fistuloclysis case series

Initial case series
- 12 patients
- ≥75cm of distal SB (ECF/stoma)
- No chyme reinfusion
- Polymeric feed
  - 30ml/h, increased by 20ml/h daily until 90ml/h over 12-16h
- Side effects
  - All patients: abdo discomfort and/or diarrhoea initially
- Outcome
  - 11/12 patients weaned off PN

Follow on series
- 69 patients
- 51 weaned off PN
- 45 had successful reconstructive surgery

Farrer et al (2014), Clin Nutr ESPEN,10,e189
Methods of feeding

Continuous

Bolus
Which method?

Continuous
- Described in the literature
- Permits reduction in or independence from PN
- Can be difficult & time consuming
- Issues with compliance

Bolus
- No published reports to date
- Unlikely to allow a significant reduction in PN
- Easier
- Increased compliance

Aims of treatment & patient preference
Which feed?

- No comparative studies
- Reports of polymeric, semi elemental & elemental tolerated
- May be beneficial to select MCT containing formula if feeding into the colon

If reinfusing chyme then polymeric 1st choice
Reinfusion

- Chyme (succus entericus)
  - Semi fluid mass of partly digested food
- Contains enzymes
  - Salivary amylase, pepsin, pancreatic
- Bile
  - Maintain enterohepatic circulation
- May promote nutritional absorption & adaptation
  - Vitamin B_{12} absorption
- Can be given alone or mixed with enteral nutrition

Would you do it?
Reinfusion of chyme

n=26  
End double barrel jejunostomy n=16  
Loop stoma n=6  
Separated end stomas n=4  
Median upstream small bowel length 127±97cm (20-250cm)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Before CR</th>
<th>During CR</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intestinal absorptive function</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intestinal wet weight output (ml/day)</td>
<td>2384±969</td>
<td>216±242</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Net digestive absorption nitrogen (%)</td>
<td>44.5±12.5</td>
<td>84.0±12.2</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Net digestive absorption fat (%)</td>
<td>47.8±25.0</td>
<td>89.3±11.1</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Parenteral nutrition delivery (n) (%)</td>
<td>17 (65)</td>
<td>2 (8)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td><strong>Nutritional status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>20.6±3.8</td>
<td>21.5±3.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Serum albumin (g/dL)</td>
<td>2.8±0.9</td>
<td>3.5±0.9</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

Monitoring

Same as for any artificial nutrition support
Complications

- GI related
  - Nausea
  - Vomiting
  - Abdominal pain
  - Diarrhoea

- Tube related
  - Falls out
  - Blockage
  - Migration

Tube selection

- **Balloon gastrostomy**
  - Sizes from 14-24 Fr in literature
- **Transgastric balloon gastrostomy**
  - Longer than balloon gastrostomy
  - Expensive
- **Foley catheter**
  - Risk of inward migration
  - Not licensed for enteral use
- **Fine bore feeding tube**
  - For intermittent use only as no external fixator

Tubes and equipment must be national patient safety alert compliant
Appliance selection

- Depends on fistula presentation
  - Separate from output stoma
  - Within laparostomy
- Is tube remaining in situ?
  - Is feed continuous or bolus?
- Need to consider
  - Ease of application for patient
  - Availability of product in community
Case study 1

- 50 year old female
- 2 years post bariatric surgery
- Complicated anatomy
  - Oesophageal stump not connected to the stomach
  - Segment of stomach and duodenum to a stoma
  - 2 metres of floating bowel jejunostomy to ileostomy (not working)
- 100ml bd bolus of 1.5kcal/ml polymeric feed
- Ileostomy started functioning
Case study 2

- 64 year old male
  - Sigmoid Ca
  - Ileostomy
- Infarcted bowel
  - Jejunostomy 60-70cm
  - Ascending colon mucous fistula
- Distal bowel not used for 14 years
  - 150 ml bd bolus of 1.5kcal/ml semi-elemental
  - Bowels now opening
  - ↓ nights on PN
Conclusion

- Fistuloclysis/distal feeding should be considered in patients with downstream bowel
  - Tailored to the needs of the patient
- Patient participation & MDT involvement essential
- More research required to optimise efficacy