BAPEN Nutrition Village 2019
Distal Feeding Workshop

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Distal enteral feeding - objectives

• To highlight the indications for, and contraindications to distal enteral feeding and fistuloclysis
• To practically demonstrate how to achieve successful distal enteral feeding
• To discuss common pitfalls / trouble shooting
• To provide an opportunity for facilitated questions and answers with a experienced clinical team.
What is Distal Feeding / Fistuloclysis?

- Fistuloclysis = Distal Feeding: enteral nutrition or hydration through an enterostomy or an enterocutaneous fistula in the distal small bowel

- Re-feeding enteroclysis = chyme reinfusion: chyme collection from the proximal stoma and re-infusion down the distal stoma

When should we consider this method of feeding?

- Ensure enterocutaneous fistula has muco-cutaneous continuity
- Radiological report to confirm bowel integrity / stenosis
- Sepsis free
- Nutritionally Stable + Biochemically stable if weaning off PN
- Output less than 2.5 litres

- Patient Perspective - Able to look at their stoma/fistula!
- Highly Motivated – define your goal; nutrition support or trophic effect

- Type II IF : prolonged acute condition, often in metabolically unstable patients, requiring complex multi-disciplinary care and intravenous supplementation over periods of weeks or months
Intestinal adaptation

• Prevent atrophy of distal intestine Trigger release of enteroendocrine hormones, including GLP-2

• Potential for improvement in LFT’s (1) (2) (Prevent cholestasis)

• Reduction in upper fistula output Inhibition of upper GI secretions (1) (3)

• Reduction in PN requirements (2) (4) (6)

Equipment
1. Gastrostomy tube
2. 5ml syringe and water
3. Hollister Catheter access port
4. Stoma appliance
5. Catheter adaptor
6. Male to male adaptor
7. Enteral tube cap
8. ENFIT to funnel adaptor
9. ENFIT transition adaptor
1. Gastrostomy tube
2. Hollister Catheter access port
3. Stoma appliance
4. Enteral tube cap
5. ENFIT Syringe to inflate balloon
6. ENFIT to funnel adaptor
7. ENFIT transition adaptor
8. ENFIT syringes
ENFIT Gastrostomy tubes

Non ENFIT tube
ENFIT – UK
Distal feeding / Fistuloclysis

Can be used to avoid TPN in *selected* patients

- Distal input matches/exceeds proximal output
- Nutritionally & Biochemically stable off PN support

Maintains integrity of distal gut prior to reconstructive surgery

- If not independent of PN, may need to stay in hospital/return to hospital for feeding prior to reconstructive surgery
- Avoid sending patients home on both PN and DETF due to contamination risk
Choice of feed

Polymeric feed (1 kcal/ml, 300 mOsm/kg, 15% MCT)
Tolerated → yes
No

Semi-elemental feed (1.3 kcal/ml, 380 mOsm/kg, 42% MCT)
Tolerated → yes
No

Elemental feed (0.8-1.3 kcal/ml, 539 mOsm/kg, 83% MCT)
Tolerated → yes
No

Failed, re-start/continue on PN
Optimise proximal enteral route

Continue to control output from proximal bowel, same advice for high output stoma patients:

- Low Fibre Diet;
- Avoid Sugary drinks and limit hypotonic fluids (1L per day) consider use of oral rehydration solutions;
- Medications - omeprazole 40mg b.d, loperamide 2-6mg q.d.s and codeine phosphate 30-60mg q.d.s proximal and distally (loperamide 8mg od 20 mins before feed)
Definition of success

- The ability to maintain nutritional stability without the need to resume PN or have parenteral fluid therapy, either in the home setting indefinitely or until further surgery.

Farrer et al, 2015, Clinical Nutrition ESPEN
68 patients identified as candidates for DETF/fistuloclysis (type 2 IF criteria)

n=33 female, median age 51

Successfully established on DETF/fistuloclysis n = 51
Median length of time to establish on feeding regimen = 29 days

Discharged Home on DETF/fistuloclysis n = 49

RIP n = 5 due to underlying comorbid conditions (n= 4 at home at time of death)

Remain in hospital until definitive reconstructive surgery n=2

Reconstructive surgery n=46
All successfully weaned off any artificial nutrition support, nutritionally independent

Not established on DETF or fistuloclysis ‘failed’ n = 17
commenced on HPN

Farrer et al, 2015, Clinical Nutrition ESPEN
### Types of Enteral Feed

<table>
<thead>
<tr>
<th></th>
<th>Elemental</th>
<th>Peptide</th>
<th>Polymeric</th>
<th>1.5 kcal polymeric</th>
<th>Saline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of patients</strong></td>
<td>9</td>
<td>15</td>
<td>19</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td><strong>Length of distal bowel-range (cm)</strong></td>
<td>15-400 Median 110</td>
<td>25-200 Median 125</td>
<td>25-300 Median 100</td>
<td>150-220 Median 187</td>
<td>0-100 Median 80</td>
</tr>
<tr>
<td><strong>Part of Colon present</strong></td>
<td>7</td>
<td>7</td>
<td>17</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Volume of infusion (mls)</strong></td>
<td>800-2000</td>
<td>500-1500 feed (max 3L ie 1500mls saline)</td>
<td>500-2000 Max 2.5L total NB 13 cases extra saline</td>
<td>1200-1500 (Max 3.2L)</td>
<td>1000-2000 Median 1000</td>
</tr>
<tr>
<td><strong>Energy range (kcals)</strong></td>
<td>880-1752</td>
<td>655-1965</td>
<td>50-2000</td>
<td>1800-2250</td>
<td>0</td>
</tr>
<tr>
<td><strong>Protein range (g)</strong></td>
<td>26-52</td>
<td>33-100</td>
<td>20-80</td>
<td>77-90</td>
<td>0</td>
</tr>
</tbody>
</table>

Types of enteral feed

- Polymeric feed: 19
- Semi elemental: 17
- Elemental: 9
- Saline: 5
- 1.5kcal polymeric feed: 3
Bolus and perioperative fistuloclysis / distal feeding - outcomes

- Improves calibre and strength of distal bowel
- Not as difficult to perform, always choose polymeric feed:
  - 100mls bolus x 5 per day Osmolite 50mls/hr/12hours minimum volume
  - Possibly just as effective at maintaining GI integrity based on the outcome data.
- SRFT outcome data N=131 type 2 IF surgery; Those who are not distally fed pre-op are twice as likely to be discharged on PN Kcals than those who are (OR 2.18, 95%CI: 1.04, 4.59; p<0.05)
Distal feeding handbook available from the intestinal failure unit.
Common Problems encountered

- Motivation /understanding of the patient in relation to benefits
- Mechanical issues – check adaptors / cones
- Hollister cones – need good manual dexterity
- Pain / discomfort – 10mls increments daily for feed, can increase infusion of saline quicker
- Not ‘tolerating’ the feed – polymeric; peptide then elemental. Optimise drug therapies – loperamide; codeine phosphate prior to feed.
- Reflux of feed into the bag – blue food colouring/ reduced the rate of infusion
- Unable to wean off PN – usually due to volume/Na/Mg
- Magnesium – Mg aspartate can be given distally
Conclusion

• Fistuloclysis/distal feeding is a useful adjunct in the management of type 2 IF patients

• Tailored to the needs of the patient

• Patient participation & MDT involvement essential
Questions?

Thank you for listening