NICE guidelines for Pancreatitis

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Introduction

- Severe acute pancreatitis
- NICE guidelines – acute pancreatitis
- Timing of nutritional intervention
- NICE guidelines – chronic pancreatitis
- Implementation recommendations
What do we already know?

- Enteral feeding is more beneficial than parenteral (Meta-analysis)
- Early enteral feeding carries the most benefit (Meta-analysis)
- Peptide feeding is superior nutritionally (1 RCT)
- Long term issues with QOL, bowel function, nutritional status (observational trials)
- Exocrine insufficiency appears common (observational trials)
- Early feeding negates the negative impact of obesity on outcome (Jin et al, 2018)
Acute pancreatitis is a spectrum

- 2 day admission
- Lap chole
- No ongoing symptoms

- Prolonged ICU admission
- Open abdomen
- Total necrosis
- Overwhelming sepsis
- Multi organ failure
- Type 3c Diabetes
Assessing tolerance

- Fluctuating inotrope support
- Intra-abdominal pressures
- Delayed gastric emptying vs. ileus
- “eating and drinking well”
- NBM – endoscopy/radiology/CEPOD lists….
- Effects of antibiotics, opiates, hypoalbuminaemia, oral thrush, type 3c diabetes, triglyceride levels……
- Psychological impact
- High nutritional requirements
NICE guidelines

Pancreatitis

NICE guideline
Published: 5 September 2018
nice.org.uk/guidance/ng104
Nutrition support for acute pancreatitis

1.4.2 Ensure that people with acute pancreatitis are not made ‘nil-by-mouth’ and do not have food withheld unless there is a clear reason for this (for example, vomiting).

1.4.3 Offer enteral nutrition to anyone with severe or moderately severe acute pancreatitis. Start within 72 hours of presentation and aim to meet their nutritional requirements as soon as possible.

1.4.4 Offer anyone with severe or moderately severe acute pancreatitis parenteral nutrition only if enteral nutrition has failed or is contraindicated.
Timing of Nutrition Support

Systematic Review

A systematic review on the timing of artificial nutrition in acute pancreatitis

Maxim S. Petrov1,*, Romana D. Pylypchuk2 and Antonina F. Uchugina1

1Department of Surgery, Nizhni Novgorod State Medical Academy, Nizhni Novgorod, Russia
2Department of Epidemiology, Maastricht University, Maastricht, The Netherlands

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>EN (n/N)</th>
<th>PN (n/N)</th>
<th>RR (random) and 95% CI</th>
<th>Weight (%)</th>
<th>RR (random)</th>
<th>95% CI</th>
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</thead>
<tbody>
<tr>
<td>Start of nutrition within 48 h of admission</td>
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<tr>
<td>Kalpofentzos et al.24</td>
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<td>9.84</td>
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<td>Olah et al.26</td>
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<td>13/48</td>
<td>27.37</td>
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<td>Eckerwall et al.27</td>
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<td>7/35</td>
<td>16/34</td>
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<td>Subtotal (95% CI)</td>
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<td>139</td>
<td>88.59</td>
<td>0.46</td>
<td>0.27</td>
<td>0.77</td>
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<tr>
<td>Total events: 16 (EN), 37 (PN)</td>
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<td>Test for heterogeneity: ( \chi^2 = 1.84, \text{df} = 4 (P = 0.77) ), I^2 0 %</td>
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<td>Test for overall effect: ( z = 2.92 (P = 0.004) )</td>
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<tr>
<td>Start of nutrition after 48 h of admission</td>
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<td>Windsor et al.25</td>
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<td>Casas et al.27</td>
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<td>0.01</td>
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<tr>
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<td>37</td>
<td>47</td>
<td>11.41</td>
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<td>0.07</td>
<td>1.34</td>
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</table>
Early versus On-Demand Nasoenteric Tube Feeding in Acute Pancreatitis


The NEW ENGLAND JOURNAL of MEDICINE

DOI: 10.1056/NEJMoa1404393
Study design

- Multicentre, randomised controlled trial: 6 University hospitals; 13 large teaching hospitals
- Cohort: 208 recruited (24%); 44% female; median age 65
- Severity (within 24 hours of presentation):
  - APACHE II >8
  - Modified Glasgow Score > 3
  - CRP > 150mg/l
    [SIRS present in 133 (65%)]
- Aetiology
  - 115 Gallstones (55%); 37 Etoh (18%); 53 “other” (26%)

## Intervention

<table>
<thead>
<tr>
<th>Control</th>
<th>Intervention</th>
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<tbody>
<tr>
<td>Randomisation within 24 hours of presentation</td>
<td></td>
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<tr>
<td>Intravenous fluids for first 72 hours</td>
<td>NJ tube inserted within 24 hours of randomisation</td>
</tr>
<tr>
<td>Commenced oral diet 72 hours after presentation</td>
<td>High nitrogen <strong>polymeric</strong> enteral feed started</td>
</tr>
<tr>
<td>If oral diet not tolerated within 96 hours of presentation – NJ tube inserted</td>
<td>Oral diet as tolerated</td>
</tr>
</tbody>
</table>
Results

- Adequate nutrition defined as 25kcal/kg in intensive care; 30kcal/kg in patients receiving ward level care
- 31% of patients in the control arm required NJ tube insertion

Figure 1. Calories Delivered with the Use of Early versus On-Demand Nasoenteric Tube Feeding.
Results

- No difference in outcomes
- No difference in adverse events
- No adverse events associated with NJ tube insertion
Consider..

- Polymeric feed
- SIRS rate low for severe acute pancreatitis?
- Median BMI higher (p=0.01) in intervention group 29 ± 5, Overfeeding
- No mention of pancreatic enzymes (diarrhoea>20%; 63% necrotising pancreatitis)
- Long term follow up: LOS; return to work, nutritional outcomes etc..

Conclusion:

No difference was observed between patients feed within 48 hours and those with delayed introduction of oral diet ± NJ feeding

All patients fed by day 5!
Original article

Early nasojejunal tube feeding versus nil-by-mouth in acute pancreatitis: A randomized clinical trial

D. Stimac, G. Poropat, G. Hauser, V. Licul, N. Franjic, P. Valkovic Zujic, S. Milic

Department of Gastroenterology, Faculty of Medicine Rijeka, University Hospital Rijeka, Rijeka, Croatia
Department of Radiology, Faculty of Medicine Rijeka, University Hospital Rijeka, Rijeka, Croatia
Study design

• Prospective single centre randomised trial
• Cohort: 214 recruited; 44% female; age range 26-90 years
• Severity (within 24 hours of presentation):
  • APACHE II ≥ 6
• Aetiology
  • 132 Gallstones (62%); 40 Etoh (19%); 42 “other” (19%)
## Intervention

<table>
<thead>
<tr>
<th>Control</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randomisation</td>
<td></td>
</tr>
<tr>
<td>Intravenous fluids for first 72 hours</td>
<td>Intravenous fluids</td>
</tr>
<tr>
<td>Commenced clear liquids on day 3</td>
<td>High nitrogen peptide enteral feed started</td>
</tr>
<tr>
<td>Commenced a low fat diet on day 5</td>
<td>25kcal/kg; 1.5g protein/kg within 48 hours of tube insertion</td>
</tr>
<tr>
<td></td>
<td>NJ feed continued for a minimum of 7 days</td>
</tr>
<tr>
<td></td>
<td>Commenced clear liquids on day 3</td>
</tr>
<tr>
<td></td>
<td>Commenced a low fat diet on day 5</td>
</tr>
</tbody>
</table>
Results

No change in:
- local complications,
- length of stay, mortality
- SIRS between the two groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Enteral nutrition group (n = 107)</th>
<th>Nil-by-mouth group (n = 107)</th>
<th>RR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pts with local complications, n (%)</td>
<td>54 (50.5)</td>
<td>46 (43)</td>
<td>1.17 (0.88–1.57)</td>
</tr>
<tr>
<td>Necrosis, n (%)</td>
<td>37 (34.6)</td>
<td>33 (30.8)</td>
<td>1.12 (0.76–1.65)</td>
</tr>
<tr>
<td>Peripancreatic fluid collection, n (%)</td>
<td>17 (15.9)</td>
<td>13 (12.2)</td>
<td>1.31 (0.67–2.56)</td>
</tr>
<tr>
<td>Pseudocyst, n (%)</td>
<td>3 (2.8)</td>
<td>1 (0.9)</td>
<td>3.0 (0.32–28.39)</td>
</tr>
<tr>
<td>Acute necrotic collection, n (%)</td>
<td>35 (32.7)</td>
<td>32 (29.9)</td>
<td>1.1 (0.74–1.63)</td>
</tr>
<tr>
<td>Walled-off necrosis, n (%)</td>
<td>7 (6.5)</td>
<td>5 (4.7)</td>
<td>1.4 (0.46–7.27)</td>
</tr>
</tbody>
</table>
Consider....

- Atlanta criteria applied retrospectively:
  - Severe: 58 patients (27%)
  - Moderate: 62 patients (29%)
- Enteral nutrition started at a median of 4 hours after admission
- Median length of stay 16 days

Did all of these patients need enteral feeding?
Delayed gastric emptying
Never never...

- 48 year old male
- Severe acute necrotising gallstone pancreatitis
- “eating and drinking well” and prescribed Fortisip Compact bd, Creon 10,000 tds.
- 3 month hospital admission in secondary care
- Transferred to tertiary centre
- 40kg weight loss (30%)
- One vomit in the evening
Impact....
Eating and drinking....
Don’t be afraid of PN

Use supplemental PN when:
• Unable to tolerate enteral feed
  • Ileus
  • High inotropes
• Unable to tolerate ADEQUATE enteral feed
• Unable to insert feeding tube
• WATCH TRIGLYCERIDES
Triglycerides....
So far...

- Mild, moderate and severe
- Inflammation, necrosis, walled off necrosis, infected necrosis
- Mortality up 20 - 50% in severe disease
- Exocrine and endocrine failure
- Lengthy admissions
- Multiple procedures / scans
- Prolonged systemic inflammatory response
- Prolonged rehabilitation
- Permanent life changing complications
Pancreatitis in pictures
Chronic pancreatitis

**Nutrition support**

26. Be aware that all people with chronic pancreatitis are at high risk of malabsorption, malnutrition and a deterioration in their quality of life.

27. Use protocols agreed with the specialist pancreatic centre to identify when advice from a specialist dietitian is needed, including advice on food, supplements and long-term pancreatic enzyme replacement therapy, and when to start these interventions.

28. Consider assessment by a dietitian for anyone diagnosed with chronic pancreatitis.

29. For guidance on nutrition support for people with chronic alcohol-related pancreatitis, see alcohol-related pancreatitis in the NICE guideline on alcohol-use disorders.

30. For guidance on nutrition support see the NICE guideline on nutrition support for adults.
Chronic pancreatitis (2)

- Networks of dietitians and specialist dietitians need to be established to support the production and dissemination of protocols to identify when advice from a specialist dietitian is needed.

**Follow-up of pancreatic exocrine function**

1.3.20 Offer people with chronic pancreatitis monitoring by clinical and biochemical assessment, to be agreed with the specialist centre, for pancreatic exocrine insufficiency and malnutrition at least every 12 months (every 6 months in under 16s). Adjust the treatment of vitamin and mineral deficiencies accordingly.

1.3.21 Offer adults with chronic pancreatitis a bone density assessment every 2 years.
Implementation

- Change of mindset regarding early feeding in acute pancreatitis
- Appreciation that these patients are diverse, and therefore their treatment needs to be
- We need networks of dietitians to allow non specialists to be able to access specialist services
- Point of contact for each feeder hospital into tertiary care
- Input to MDT / clear referral pathways
- Local agreement with primary care re: follow up for chronic pancreatitis
Conclusion

• Severe acute pancreatitis has a massive impact on the abdomen
• Most patients need total or supplementary nutrition
• Many will need PN and EN
• Obese patients need early nutrition support
• NJ vs. NG is a clinical decision….
• Watch triglycerides...
• Don’t forget diabetes….
• Pancreatic enzymes are often needed