The NICE guidelines for nutrition support in adults can be applied to renal inpatients for identifying those at risk of refeeding syndrome

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Refeeding Syndrome (RS)

“Refeeding syndrome (RS) broadly encompasses a severe electrolyte disturbance (principally low serum concentrations of intracellular ions such as phosphate, magnesium, and potassium) and metabolic abnormalities in undernourished patients undergoing refeeding whether orally, enterally, or parenterally”

RS and Renal disease

- Renal disease often results in:
  - Hyperkalaemia
  - Hyperphosphatemia
  - Difficulties interpreting weight due to fluid overload

Is RS masked in patients with renal disease admitted to a renal wards?
Aim

- To evaluate if the NICE Adult Nutrition Support Guidelines (2006) can be used to identify and managing patients at risk of refeeding syndrome with renal disease

NICE Adult nutrition support guidelines (2006) [http://www.nice.org.uk](http://www.nice.org.uk)
Methods (1)

• Prospective audit conducted by 5 renal dietitians
• From 2\textsuperscript{nd} January 2013 to 31 December 2013
• 2 renal wards, total bed capacity = 32
• Current practice:
  – MUST completed by nurse
  – Weekly attendance to ward round
  – Daily presence of the renal dietitian, with proactive dietetic approach (renal dietitian will assess all admissions: rationale, previous dietetic input)
Methods (2)

- For all patients identified at risk of malnutrition:

  Box 1 Criteria for determining people at high risk of developing refeeding problems

  Patient has one or more of the following:
  - BMI less than 16 kg/m²
  - unintentional weight loss greater than 15% within the last 3–6 months
  - little or no nutritional intake for more than 10 days
  - low levels of potassium, phosphate or magnesium prior to feeding.

  Or patient has two or more of the following:
  - BMI less than 18.5 kg/m²
  - unintentional weight loss greater than 10% within the last 3–6 months
  - little or no nutritional intake for more than 5 days
  - a history of alcohol abuse or drugs including insulin, chemotherapy, antacids or diuretics.
Results (1)

- Over 12 months we had 1428 hospital admission (elective admission were excluded)
- 17 patients were identified to be at risk of RS:
  - 9 female and 8 male patients aged 23-88 years.
- Reason for being at risk of RS (n=17):
Results (2)

• Route of feeding:
  – enteral and oral (n=10)
  – parenteral nutrition (n=3)
  – enteral only (n=2)
  – oral only (n=2)

• Three patients developed RS which was identified by a drop in electrolytes. Their pre feeding electrolytes were:
  – Potassium  3.1  3.3  3.8mmol/l
  – Phosphat e  0.32  0.38  0.55mmol/l
  – Magnesium  0.72  0.82  0.67mmol/l
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Management</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pabrinex</td>
<td>K, PO₄, Ca checked prior to feeding</td>
<td>16</td>
</tr>
<tr>
<td>Thiamine and Vitamin B Co-Strong</td>
<td>Mg checked prior to feeding</td>
<td>10</td>
</tr>
<tr>
<td>Thiamine only</td>
<td>Feeding commenced at ≤ 10kcal/kg</td>
<td>14</td>
</tr>
<tr>
<td>Multi-vitamin and trace element</td>
<td>Feeding commenced &gt; 10kcal/kg</td>
<td>3</td>
</tr>
</tbody>
</table>

n=17
Discussion

- RS was a rare occurrence on our renal wards. Incidence = 17/1428 of total admissions in 1 year (1.2 new cases per 100 adm in 1 year)

- Rio et al (2013) had similar results
  

- 4 patients had higher than normal pre feeding electrolytes (potassium and phosphate) but they were still identified at risk of refeeding syndrome using NICE
Implication to dietetic practice

• Reflection of current dietetic practice

• Presented the audit to renal consultant meeting

• NICE guidelines still applicable: assessing each patient individually and close monitoring is key
Reflection and next step

• Several aspect could be improved:
  – Age, time frame (Reduced to 6 months?)
  – Patients reason for admission
  – Patients clinical outcomes

• Doing an audit as a team is no easy (you need to get your team on board!) but can make a huge difference to practice and it works!

• Next step: Dietetic audit on enteral feeding, cost effectiveness and clinical outcomes
Any Questions?

Acknowledgement: This audit was presented as a poster presentation at the British Renal Society (BRS) in Leeds in June 2015