Clinical Outcomes for Nutrition Support in Patients with Chronic Kidney Disease

Claire Gardiner (Leeds)

On behalf of the British Dietetic Association Renal Nutrition Group (BDA RNG) working party on Clinical outcome measures
The starting point!

- NHS white paper “Liberating the NHS”
- BDA model of clinical outcomes
- Leeds presented work at national RNG meeting
- July 2011 a national working party on behalf of RNG members was formed
- 12 members and Ingrid Darnley (Policy Officer, BDA)
The first meeting

- Discussed what we wanted to achieve

- Defined outcomes and agreed terminology

- Developed 5 dietetic models with a consistent approach

- Models based on BDA model but adapted to ensure relevance for the specific nutritional problems encountered within renal medicine
Agreed definition of outcome

“A change in health / health associated risks of an individual, group of people or a population which is attributable to an intervention or series of interventions”

- Specific
- Patient centred
- Achievable given sufficient resources
- It should be measurable with a timeframe
- Recognise that other factors can influence the defined outcome
Agreed terminology

Goals

- These are set to help patient meet their overall outcome
- Should be patient centred
- Realistic, achievable and measurable

Outcome Measures

- These are variable measurements of health status to show how the outcomes have been achieved
Developing the models

Five renal models have been developed:

- Oral and artificial nutritional support
- Weight management
- Potassium management
- Phosphate management
- Fluid and salt management

Changes were monitored for all models in the following domains:

- Biochemistry
- Symptoms and Physical
- Diet and Behaviour: dietary intake, knowledge, motivation, ability to change
- Psychological
- Patient experience
Barriers

- The group agreed that the monitoring of barriers was important in order for us to understand when and why outcomes have not been achieved.

- Examples of barriers:

**Diet related factors**
- Lack of understanding or motivation to change
- Externally derived knowledge e.g. conflicting advice from other sources

**Non diet related factors**
- Medical factors e.g. inadequate dialysis
- Pharmacological factors e.g. concordance with medication
- Organisational issues
Challenges

- One of the most challenging aspects has been to capture the complexity.

- To ensure that all the relevant aspects (including barriers) have been considered.

- What part of the outcome relates to the dietitians’ role within the MDT?

- How to capture outcomes in a practical and reliable way i.e. paper records vs. electronic.

- Plan to audit these models.
BDA RNG Clinical outcomes for oral and artificial nutritional support

By
Nevine El-Sherbini
(Renal Dietitian, Hammersmith)

&

Susan Reed (Renal Dietitian, Edinburgh Royal)
Current guidelines:


- BDA Renal Nutrition Group (2011) Evidence Based Dietetic Guidelines: Protein requirements of adults on haemodialysis and peritoneal dialysis

- Systematic review and meta-analysis in maintenance dialysis patients

1. Examine impact of enteral nutritional support
2. Investigate whether specifically designed enteral formulae superior to standard formulae
3. Compare efficacy of enteral tube feeding vs PN
Outcome measures:

- Dietary intake
- Anthropometry
- Serum Albumin
- Serum pre albumin
- Clinical outcomes (QOL, Mortality, complications)
- Electrolytes (serum potassium and phosphate)

Outcome:

- Suggests that enteral multinutrient support with disease specific formulae significantly increases serum albumin concentrations
- Improves total dietary intake compared with routine care (usual diet).

Overall insufficient published data
Campbell KL et al (2009) implementation of standardized nutritional guidelines by renal dietitians is associated with improved nutritional status. *Journal Renal Nutrition*

Investigated the impact of using standardised nutritional guidelines on the nutritional status of patients receiving maintenance haemodialysis patients

- Energy and protein intake according to dietary interview
- Nutritional status according to SGA
- Dry weight
- Biochemistry (inc albumin, potassium and phosphate)
Campbell KL et al (2009) implementation of standardized nutritional guidelines by renal dietitians is associated with improved nutritional status. *Journal Renal Nutrition*

- Repeated measure analysis
- Alb, K, Target weight: stable
- PO4 significantly reduced
- SGA: B/C reduced from 14% to 3%
- Outcome: using guidelines was associated with improvement in nutritional status without need for increased resources or dietitian time
Outcome (end point)

1. Subjective global assessment

A. To achieve SGA score of A (3 point scale) or 6-7 (7 point scale)

B. To achieve SGA score of B (3 point scale) or 3-5 (7 point scale)

C. To maintain agreed SGA score
Outcome (end point)

2. Dry weight

A. To achieve an increase in dry weight of ___________kg

B. To maintain dry weight of ___________kg
Timeframe

To achieve and maintain agreed subjective global assessment or agreed dry weight within ___ months (or following initial dietetic assessment/advice and ___ dietetic reviews)
Rationale for outcome

- To improve overall nutritional status to reduce the morbidity and mortality risks associated with protein-energy wasting
- To improve quality of life and functional status
## Risks

<table>
<thead>
<tr>
<th>Risk</th>
<th>Outcome</th>
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<tbody>
<tr>
<td>Low SGA</td>
<td>Increased morbidity and mortality</td>
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<tr>
<td>Low BMI</td>
<td>Increased mortality</td>
</tr>
<tr>
<td>Inadequate calorie and protein intake</td>
<td>Reduction in dry weight and muscle mass</td>
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<tr>
<td>Fluid overload</td>
<td>Pulmonary oedema, chronic heart failure</td>
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<tr>
<td>Refeeding syndrome</td>
<td>Deranged electrolytes</td>
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<tr>
<td>Incorrect position of nasogastric tube</td>
<td>Aspiration pneumonia</td>
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<tr>
<td>Infected gastrostomy site</td>
<td>Infection, MRSA, leakage, skin breakdown</td>
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<tr>
<td>Indicator</td>
<td>Goal</td>
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<td>---------------------------------</td>
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<tr>
<td>Symptom change (essential)</td>
<td>Improvement in appetite</td>
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<tr>
<td></td>
<td>Reduction in nausea and vomiting</td>
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<td>Regular and normal bowel movements</td>
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<td>Improved skin integrity</td>
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<tr>
<td>Physical (essential)</td>
<td>Stable or increase in dry weight</td>
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<td></td>
<td>Acceptable BMI</td>
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<td>Stable or increase in muscle mass</td>
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<td></td>
<td>Stable or increase in muscle strength</td>
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<td></td>
<td>Improvement in performing ADL's</td>
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<td>Indicator</td>
<td>Goal</td>
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<tr>
<td>Biochemistry</td>
<td>Increase in pre dialysis urea</td>
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<td></td>
<td>Normal levels of potassium and phosphate</td>
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<tr>
<td>Dietary knowledge</td>
<td>Pt is able to state benefit of improved nutritional status</td>
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<td></td>
<td>Pt can identify ways to increase calorie and protein intake</td>
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<td></td>
<td>Pt is able to state oral or artificial nutritional supplement prescription or</td>
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<tr>
<td>Indicator</td>
<td>Goal</td>
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<tr>
<td>Behaviour change</td>
<td>Pt is able to make advised changes to diet and identify and address possible barriers</td>
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<td></td>
<td>Pt is able to administer oral nutrition supplements or artificial nutrition support</td>
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<td></td>
<td>Pt has an increase in calorie and protein intake</td>
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<tr>
<td>PREMS</td>
<td>Pt feels they have benefitted from oral nutrition support and dietetic advice</td>
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<tr>
<td>Quality of life</td>
<td>Pt has an improved quality of life</td>
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Care pathway for dietetic intervention for nutrition support

Referral to the dietitian for nutrition support

Initial assessment
- Identify nutritional problem
- Investigate causes of poor intake
- Identify signs and symptoms of poor intake

Oral nutrition support
- Overall clinical outcome, goals, timeframe and plan agreed with patient

Artificial nutrition support
- Overall clinical outcome, goals, timeframe and plan agreed with patient

Planned reviews

Outcomes met
- Planned reviews

Outcomes not met
- Discuss barriers with the patient and MDT – consider artificial nutrition support
- Follow up discussed with patient and MDT to re-refer if needed

Liaise with medical team
Medical team to re-refer if needed

Not appropriate for oral or artificial nutrition support

Appropriate for oral nutrition support

End of episode of care
Timeline

- Funding applied for BDA/GET
- Linking in with other BDA specialist groups
- Pilot study: October 2012
- Next meeting January 2013
- National audit 2013
- Proposed completion deadline 2014
Thank you!!!!