



iCAHE JC Critical Appraisal Summary

Journal Club Details

Date of submission	2013
Journal Club location	RAH
JC Facilitator	Claire Roberts
JC Discipline	Nutrition & Dietetics

Clinical Scenario

What is the occurrence of refeeding syndrome in adults started on artificial nutrition support?

Article/Paper

Rio, A, Whelan, K, Goff, L, Reidlinger, DP & Smeeton, N 2013, 'Occurrence of refeeding syndrome in adults started on artificial nutrition support: prospective cohort study', *BMJ Open*, vol. 3, pp. 1-9 <e-pub>.

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Article Methodology: Prospective Cohort Study

Returned JC on: 2013

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Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>Was the purpose stated clearly?</p> <p>The purpose of the study was to determine the occurrence of refeeding syndrome in adults with commenced on artificial nutrition support.</p> <p><i>Population:</i> Adults on artificial nutrition support.</p> <p><i>Outcomes:</i></p> <p><u>Primary</u>- occurrence of refeeding syndrome</p> <p><u>Secondary</u>- risk factors that predict refeeding syndrome</p> <p><u>Tertiary</u>- mortality due to refeeding syndrome & all-cause mortality.</p>
2	✓			<p>Was relevant background literature reviewed?</p> <p>Background literature has been reviewed in the justification of this study and has been presented in the introduction.</p>
3	✓			<p>Describe the study design. Was the design appropriate for the study question?</p> <p>The study used a retrospective cohort (observational study) design. Whilst a randomized controlled trial has been considered the “gold” standard in determining causal relationships, an observational design may still be considered an appropriate approach to address the objectives of this study.</p>
4	✓			<p>Was the sample described in detail?</p> <p>The sample was described in the <i>results</i> section (p. 4) demographic and clinical details were reported. These details were also reported in table 3 (p. 5).</p> <p>The sample size was estimated and predicted that a cohort of 240 would produce between 2 and 24 potential participants meeting the diagnostic criteria. A total of 243 participants were recruited.</p> <p>Describe ethics procedures. Was informed consent obtained?</p> <p>Ethical approval was obtained from King’s College Hospital Research Ethics Committee.</p> <p>Informed consent was obtained from participants or next of kin prior to enrolment with participants excluded due to failure to obtain consent/assent due to serious illness or lack of next of kin.</p>

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5			<p>Specify the frequency of outcome measurement (i.e., pre, post, follow-up)</p> <p>The frequency / time points that the data was collected are reported in the section <i>data collection</i>. This should have been consistent for all included participants.</p> <p>Were the outcome measures reliable & valid?</p> <p>Criteria for determination of refeeding syndrome risk* and criteria for confirmation of refeeding syndrome from the start of artificial nutrition support were outlined (tables 1 and 2 respectively). Food portion sizes were estimated from a reference guide and total daily energy intake was calculated using a nutritional analysis software package, (Compeat, Oxon, England).</p> <p>*National Institute for Health and Clinical Excellence. Nutrition support in adults. National Collaborating Center for Acute Care. London, The Royal Surgeons of England.</p>
6			<p>Results were reported in terms of statistical significance?</p> <p>The results are presented in text and tables. Interquartile ranges and percentages were reported.</p> <p>Bottom line result (<i>key messages</i>):</p> <ul style="list-style-type: none"> ▪ The refeeding syndrome is a complex constellation of major characteristics which requires a multifacet diagnostic criteria. ▪ The refeeding syndrome is a rare, survivable phenomena that can occur despite identification of risk and hypocaloric nutritional treatment. ▪ Intravenous glucose infusion prior to artificial nutrition support can precipitate the refeeding syndrome. ▪ Starvation is the most reliable predictor for onset of the syndrome. <p>What was the clinical importance of the results? Were differences between groups clinically meaningful?</p> <p><i>Answer provided by journal club:</i></p> <p>Refeeding syndrome is rare in today's current practice due to immediate electrolyte replacement and hypocaloric feeding with gradual upgrades.</p>
7	✓		<p>Did any participants drop out from the study?</p> <p>A flow chart (figure one) shows the flow of participants in the study. The excluded participants are listed on this diagram with the reason for exclusion. The main reasons for exclusion were the inability to obtain consent and death within 24hrs of feeding tube insertion.</p>

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8			<p>What did the study conclude? Conclusions were appropriate given study methods and results?</p> <p>Refeeding syndrome was a rare, survivable phenomenon that occurred during hypocaloric nutrition support in participants identified at risk. Independent predictors for refeeding syndrome were starvation and baseline low-serum magnesium concentration.</p> <p><i>Answer provided by journal club:</i></p> <p>Primary risk factors for refeeding syndrome are starvation and low serum magnesium</p> <p>Refeeding syndrome is a rare phenomenon</p> <p>There is no mortality directly associated with refeeding.</p>
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