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Short-term outcome of an inpatient nutrition replacement protocol for adolescents with anorexia nervosa

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Introduction

There is no international consensus on the optimal rate of nutrition replacement in adolescents with anorexia nervosa (AN). Literatures over last 10 years has shown that replacing nutrition at a higher rate is both safe and effective and the risk of refeeding syndrome in inpatient NRP is more related to the degree of malnutrition, not the rate of nutrition replacement. In the past, our dietitian found it arduous to negotiate with adolescents with AN on their nutrition replacement and a lot of the adolescents actually did not finished the prescribed nutrition or secretly threw the food away. Our new inpatient nutrition replacement protocol (NRP) not only makes the negotiation easier but also the prescribed nutrition more acceptable to our patients because of the anchoring effect, an established psychological phenomenon about heuristics and biases in decision making.

Objectives

To assess the safety and effectiveness of our inpatient nutrition replacement protocol by comparing the weight outcome with and without NRP

Methodology

This is a retrospective case-control study assessing the clinical outcome and safety of our inpatient NRP. Activity responsibility stages, nutrition responsibility stages and house-rules were established for standardization of their activities on ward, home food and management plan. Intervention group: newly diagnosed cases of restrictive type anorexia nervosa, atypical anorexia nervosa or avoidant/restrictive food intake disorder according to Diagnostic and Statistical Manual (DSM) 5 from May 2016 onwards Control group - newly diagnosed cases of anorexia nervosa or eating disorder not otherwise specified according to DSM IV from January 2014 to April 2016. Exclusion criteria: male, hospitalization less than 14 days, extremely low weight with mortality, laxative abuse or excessive weight gain suggestive of unnoticed eating disorder behavior e.g. water loading. Intervention: inpatient NRP consists of 3 main meals and 3 snacks a day starting at 1250kcal/day and escalated by 250kcal/day on

day 2, 3, 5 to 7 of admission.

Result

All 10 adolescents in the intervention group achieved the goal of 0.5kg/week weight gain on day 14 when compared to 5 of the 12 in the control group (Fisher exact test; $p=0.005$). The difference of their average cumulative weight changes on day 14 was statistically significant (Mann-Whitney test; 9.38 vs 4.7%, $p=0.02$). There was no refeeding syndrome in either the intervention or control group. This study provides preliminary evidence that our inpatient NRP is safe and improved short term outcome in adolescents with AN. Further studies are needed to assess the long-term outcome.