

Characteristics of Inpatient Care for Anorexia Nervosa Restricting Type in Japan

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Rapid nutrition approach assisted by nasogastric tube may benefit treatment of adolescents with ANR in both short term and long term.

Objectives

In Japan, adolescent patients with anorexia nervosa restricting type (ANR) occupy a large part of child and adolescent psychiatric wards in general hospitals. Inpatient care for adolescents with ANR often results in prolonged hospitalization, almost 7 to 8 months in Japan (Arai. et al. 2009).

Clinicians often start providing meals at low caloric levels and increase slowly, according to the current standard of care for refeeding patients with ANR. The purpose of such "start low and go slow" approaches is to minimize the risk of refeeding syndrome. However, these lower calorie approaches have recently been linked to poor weight gain and prolonged hospitalization (Garber et al. 2012).

We aimed to compare standard care to rapid refeeding approach which starts with high calorie intake assisted with nutrition from nasogastric tube to achieve more efficient inpatients care.

The study was approved by the ethics committee of Yokohama City University Center Hospital.

Method

Study type; retrospective study from medical records and clinical database.

Samples; Patients with ANR aged 9 to 17 years old, who were admitted from April 2015 to May 2017 and monitored for more than one year at two general hospitals, Yokohama City Univ. Hosp. and Yokohama City Univ. Medical Center.

Exclusion criteria; Patients who changed hospitals, and/or discontinued treatment during the survey period.

Statistical analysis; Of the 31 inpatients with ANR, 7 patients were excluded and 24 patients were finally analyzed. First, we divided clinical approaches into two strategies, Standard Care and Rapid Nutrition.

Standard Care

- Start with low calories orally. The calories are set according to their calorie intake before admission (approx. 600 kcal).
- Gradual advancement of calories with patients' agreement
- Permission for physical activities along with body weight restoration
- Nasogastric tube feeding in case of significant delay in response
- Discharge at achievement of target body weight defined by agreement with patients

Rapid Nutrition

- Target calorie is 2200 kcal and calories are raised mandatory every two to three days.
- Nasogastric tube feeding is applied if the patients could not intake all food provided.
- Physical activities are not restricted unless patients have severe complications (c.f.. Severe liver dysfunction, low blood pressure)
- Discharged when restored from severe malnutrition, and nasogastric tube care may be continued at home.

Then, we evaluated the length of hospitalization, general functioning (GAF) at admission and at discharge, body weight level (BMI Z score, adjusting for age among Japanese), executing rate of tube feeding and physical restraints and rehospitalization within six months.

We compared body weight levels between Standard Care and Rapid Nutrition. In order to verify the therapeutic effect, the weight changes converted into monthly rate were assessed at three periods; from hospitalization to discharge (period1), from discharge to one year after discharge (period 2), and from hospitalization to one year after discharge (period 1+2), respectively.

We applied Fisher's exact test and t-test for analysis, and defined significance at $\alpha=0.05$. Analyses were performed using JMP.

Result

Table.1 Characteristics of patients at admission

		Standard care	Rapid nutrition	
Sample	n	14	10	
Girls	n	14	8	
Age	mean (SD)	14.1 (1.6)	13.5 (3.1)	n.s.
GAF at admission	mean (SD)	21.6 (4.6)	25.6 (7.2)	n.s.
BMI-Zscore at admission	mean (SD)	-4.33 (1.81)	-4.06 (1.21)	n.s.

Note: * $p<0.05$, n.s.= not significant

Table.2 Difference of treatment process after admission

		Standard care	Rapid nutrition	
Length of hospitalization	mean (SD)	113.6 (63.8)	45.7 (23.6)	*
GAF at discharge	mean (SD)	49.6 (13.0)	41.0 (8.4)	n.s.
BMI-Zscore at discharge	mean (SD)	-2.41 (0.34)	-2.59 (0.42)	n.s.
Tube feeding	n (%)	5 (35.7)	7 (70.0)	n.s.
Physical restraint	n (%)	1 (7.1)	1 (10.0)	n.s.
Rehospitalization within 6 months	n (%)	3 (21.4)	2 (20.0)	n.s.
BMI-Zscore one year after discharge	mean (SD)	-3.05 (1.49)	-0.81 (1.01)	*

Monthly body weight change in BMI z score

From hospitalization to discharge (period 1)	mean (SD)	0.51 (0.39)	0.98 (0.63)	*
From discharge to one year after discharge (period2)	mean (SD)	-0.05 (0.11)	0.15 (0.12)	*
From hospitalization to one year after discharge (period 1+2)	mean (SD)	0.07 (0.13)	0.24 (0.10)	*

Note: * $p<0.05$, n.s.= not significant

Discussion

The present study showed that, in comparison to standard care, rapid nutrition associated with nasogastric tube achieved faster, sufficient weight recovery with shorter hospitalization, and better weight was maintained in the long term.

This is the first study that compared rapid nutrition to standard care for children and adolescents with ANR in Japan.

Since this study was a retrospective study with a small sample size, risk of selection bias and confounding factors such as motivation towards recovery, relationships with therapists and family members, were not considered. Thus, prospective study with a larger sample size should be implemented.

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Conflict of interest(COI); No potential COI to disclose