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RESEARCH ARTICLE

IMPACT OF INTENSIVE NUTRITIONAL INTERVENTION IN IMPROVING WEIGHT STATUS OF AN ADOLESCENT WITH ANOREXIA NERVOSA – A CASE REPORT

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ABSTRACT

Anorexia Nervosa is an eating disorder and possibly life-threatening disorder if not treated on time. We here report an unusual case of a 14 year old boy with anorexia nervosa who had significant weight loss over a period of two years. This case report narrates the nutrition intervention and the challenges encountered by the dietitian to improve the nutritional status of the patient. A significant weight gain was achieved from 29kg to 42 kg over a period of two months with an intense nutritional therapy.

Key words: Nutritional therapy, Anorexia nervosa, Eating disorder, Refeeding syndrome.

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INTRODUCTION

Anorexia nervosa (AN) is characterized by attempts to lose weight, to the point of starvation. It is an eating disorder characterized by severe energy intake restriction, fear of gaining weight.

In addition, AN is described as follows

- Chronic dieting despite being hazardously underweight.
- Obsession with calories and fat contents of food.
- Engaging in ritualistic eating patterns such as cutting food into tiny pieces, eating alone and hiding foods.

Refeeding patients with AN requires meticulous planning of diet by the dietetics team, because refeeding syndrome is possible while feeding patients with AN. Refeeding syndrome is a potentially fatal condition as well as serious condition that can occur during refeeding after prolonged starvation. It is a syndrome consisting of metabolic disturbances that occur as a result of reinstitution of nutrition to patients who are starved, severely malnourished or metabolically stressed due to severe illness. It is caused by sudden shifts in the electrolytes that help body to metabolize food, hence regular monitoring of electrolytes is mandatory while treating the patient with AN.

CASE REPORT

A 14 year old boy studying 8th standard presented with complaints of abdominal pain and loss of weight from 35kg to 29.6kg for the past 2 years.

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He had lost approximately 5-6kg of weight in 2 years. He had progressive loss of appetite with fatigue and feeling of loss of energy. He prefers to eat slowly and eats foods for a longer period of time. He had pain in upper abdomen 1 to 2 hours after having food. He was hospitalized for treatment of weight loss and abdominal pain. He underwent treatment for enteric fever, loss of appetite and a gastroscopy done in June 2015 elsewhere showed corpus gastritis and repeat scopydone in 2016 also confirmed the same. Finally the patient was referred to our hospital for further management. He did not have interest in eating food and he passes stool immediately after taking food. Since the investigations carried out by the treating doctor did not reveal any significant disease or disorder, eating disorder – AN was considered. Patient was referred to Dietitian for Nutritional intervention by the treating doctor. Theprimary medical nutritional therapy goals were to prevent weight loss and promote healthy eating habits.

Nutritional Intervention: Dietitian works closely with an interdisciplinary team comprised of psychologists, pediatricians and nurses for delivering nutrition care for patients with eating disorders. 24 hour dietary recall method was used to collect the patients 'present dietary intake. In addition, information regarding regular food pattern and reasons for reducing the quantity of food were also collected. Discussion with the mother was helpful to get to know the reasons for the aversion towards food. The classical example of AN is very much befitting in this patients' case as he started reducing weight with an apprehension that he is obese which was found during assessment. The usual practice is that the Pediatricians spend more time with the patient to convince to initiate feeding orally& if it fails, the pediatrician will initiate tube feeding soon after the admission.

Table 1. Anthropometric Assessment

Parameter	Measurement
Height	156cm
Weight	29.6kg
Usual body weight	35 kg
Desirable body weight	45kg

However in this case, the dietitian was called to intervene on the first day of admission of the patient. The role of the dietitian is to counsel and convince the patient to eat. Patients and their relatives are advised to give their favorite foods regardless of the portion size. If the patient is willing to eat favorite foods; patients are allowed to eat their favorite foods as much as they want. Previously studies suggest, nutritional rehabilitation should start low and go slow often starting at 600 to 1200 calories per day and advancing 200 calories per day. But this approach has been linked to the underfeeding syndrome characterized by poor weight gain, prolonged illness and in some cases even death. Recent research supports that initiating higher caloric prescription on admission to the hospital starting patients on 1400 to 2000 calories per day with close medical monitoring which shortens hospital stay and also increases the rate of weight gain at a faster rate. The patient's usual food intake was approximately 1000 calories which has gradually come down to 500 calories per day. After assessment the patient was initially started with 1000 calories / day. The patient was closely monitored and steadily increased calories to 2500 calories. Though the dietitian prescribed 1000kcal, the first and second day intake during hospitalization was around only 800cal. Then the strategy was to improve the calories, ghee was introduced in all foods consumed by the patient. On the fifth day calorie intake was increased to 1350cal. Patient coped up well with the diet plan executed from the 5th day. Dietitian spent time in explaining the importance of consuming healthy diet and benefits of consuming breakfast daily and also explained the ill effects of junk foods. Small frequent meals and snacks were planned meticulously to provide adequate calories and proteins after considering the preferences of the patient. Patient was motivated positively and the role of nutrition therapy and its outcome on health was well explained.

Table 2. Grading up of Energy and Protein during admission period

Day	1	2-3	4-5	6-12	13-17	17-60
Energy (Kcal)	800	1200	1500	1800	2100	2500
Protein (g)	30	40	50	60	70	75

Continuous Nutritional Assessment

Regular nutritional assessment continued till discharge from the main hospital. Once in 2 days the patient weight was checked. It is a practice to check the weight of the patient without their knowledge. However incidentally when the patient noticed weight gain on the weighing scale, then the eating strategy of the patient changed by consuming less quantity of food with a view to reduce weight purposefully which was very evidently captured during nutritional assessment by the dietitian. The patient's attention was diverted while checking the weight thereafter. Till discharge, the patient was not informed about the weight at all. Careful monitoring of body weight, heart rate, serum electrolyte particularly phosphorus is mandatory to prevent refeeding syndrome while feeding patients with AN. Usually serum phosphorus level is lower than the normal level

Table 3. Increase in Body weight during admission period

Day	2	4	7	8	9	15	Time of discharge
Body weight(Kilograms)	29.6	30.4	32	32	32.8	34	42

(normal 2.5-4.6mg%) in eating disorders. Starvation and poor nutritional status are the main cause of hypophosphatemia. This patient was closely monitored to maintain normal serum phosphorus level. Along with supplements of phosphorus and phosphorus rich foods like dhals, nuts, non-vegetarian (fish, chicken, egg etc.), milk were introduced one by one daily in the diet. Patient gained weight from 29.6 kgs to 34 kgs over a period of 15 days. He was then referred to Child Adolescent Psychiatry (CAP) for rehabilitation by the treating pediatrician. The main aim of transferring the patient to CAP is to treat behavioral changes. He was continuously monitored by the dietitian in CAP. Calorie and protein assessment was continued on a regular basis. The dietician spent time with the patient during the visit made at CAP to ensure adequacy of food intake. He started consuming eggs, fish, chicken, nuts, banana, and sweetsetc. Which were not eaten by the patient for the last 2 years. Since the patient was not keen on eating veges in the form of sabjis / curries, dietitian advised the mother to prepare thick vege soups, doughs / batter made up of vege puree or finally chopped veges to make it colorful and attractive to the patient. Pictures on food pyramid and my plate model was shown to the patient and mother to make them understand the importance of including five food groups in the diet daily to make it balanced and healthy. The patient coped well with the nutrition intervention and a significant weight gain was achieved from 29.6kg to 42 kg over a period of two months.

DISCUSSION

When the patient was handed over to dietitian for nutritional rehabilitation, the primary medical nutrition therapy was to prevent weight loss and promote weight gain. This was very challenging for the dietitian to initiate diet therapy since the patient had aversion towards diet. Dietitian discussed with the treating doctor on the patients compliance with the current nutritional intervention on a regular basis and kept informed about the increment of calories and proteins. Every day, dietitian made a point to spend quality time with the patient to convince and understand the importance of adequate food to maintain good health and also described ill effects of starvation. Dietitian also counseled the mother to motivate the child to consume adequate food and prepare the food which is liked by the patient most. Initially the patient did not show any interest while the dietitian was counseling, however, dietitian continuously kept interacting with the patient. 0n the first day he was only consuming 500kilocalories and his weight was 29.6kg.After nutritional intervention, the patient had gained 5-6 kg(35kg) of body weight in two weeks. He was then shifted to CAP for rehabilitation from the main hospital. In CAP the dietitian visited the patient regularly till discharge. At the time of discharge he was consuming 2500 Kcal and attained 42 kgs.

Conclusion

Eating disorders are complex and require comprehensive approach to manage patients with AN. The role of dietitian in treating anorexia nervosa is always challenging. In this case report, we focused more on understanding the

multidimensional aspects of food consumption, behavior and attitude of the patient. The communication skills and counselling skills of the dietitian played a vital role in convincing this patient to be more present with the meals to achieve better results. After nutritional intervention, the patient had weight gain of 5-6 kg (35kg) of body weight in two weeks in the main hospital and an additional 7 kg in CAP which was closer to the desirable body weight for his age. He was 42 kgs at the time of discharge from CAP. It is evident that intensive nutritional therapy by the dietitian can improve the weight status of patients with AN.

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