Anorexia Nervosa (AN) in Inpatients at a Childrenâ s Hospital (2005-2011)

Abstract:

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Abstract

AN is a serious mental illness best treated in the community[1]. Those with critically low weight require hospitalisation. There is little published research on AN in Ireland. The aim of this audit was to evaluate the Irish experience. The mean age on admission was 13.5 yrs which is 6mo earlier than 2002 figures. Boys represented 6/20 (30%) of admissions. On admission girls were more underweight than boys (0.4th centile V 9th centile for BMI). This was despite girls presenting to hospital sooner than boys post onset of symptoms. Aside from low weight, over-exercising and food restricting were the most common presenting features. Inpatient weight restoration is successful with a mean weekly weight gain of 930g which is within the recommended range of 500-1000g/wk. Mean hospital stay was 38 days.

Introduction

The 2002 Census estimated there were 2,400 adolescent females with AN with an average age of onset of 14 years[2]. In England during the last decade, there has been an 80% increase in hospitalisation of girls less than 16yrs for the treatment of AN[3]. CUH has seen a 130% increase in the number of admissions over the same period. Traditionally it was estimated that 10% of sufferers were men though new estimates are adjusting this to 25%[4].

The Maudsley treatment approach, used in CUH, acknowledges the importance of the parents and child in recovery[5]. Patients are initiated on a non-negotiable meal plan with total bed rest and supervision usually implemented. MDT community based therapy is recommended in treating the complex needs of the patient and family[6]. The need for acute hospital admission is usually indicated in poor physical health or poor response/lack of access to outpatient treatment. The Royal college of Psychiatrists state that those where BMI falls <2nd centile probably warrant hospitalisation. Rate of weight loss and BMI centiles position are associated with cardiovascular and electrolyte instability[7]. Calorie content of the meal plan is increased gradually to minimise risk of refeeding syndrome. The longer a patient remains in suboptimal nutrition the more severe the disorder can become so it is important to correct undernutrition promptly[8]. Body-weight gain during the initial refeeding phase can be slowed by an increase in resting energy expenditure[9]. The weight gain aim is 500-1000g/week[1]. A recent study found better outcome among patients who had gained greater than 800g per week[10].

Methods

This audit reviewed the demographics of all inpatients admitted with AN over a seven year period between 2005 and 2011 (n 20). Data from medical and dietetic files were analysed. Descriptive statistics were used due to small numbers.

Results

See Table 1 for admission profile. 20/20 (100%) of patients presented through A&E. The majority (60%) were self referral with the remaining referred via G.P. None had been previously linked in with CAMHS.

Symptom profile

On admission, it was noted that 5/20 (25%) of patients were known to have been vomiting and 13/20 (65%) were over-exercising. All patients were food restricting. All the girls who had reached menarche had amenorrhea.

Anthropometry

Mean BMI on admission was 14.8kg/m^2 rising to 16.7kg/m^2 on discharge. Girls presented on a lower BMI centile (0.4th) than boys (9th) despite their earlier presentation post onset of symptoms. Although presenting at a lower weight girls made greater gains over stay (5.4kg over total stay versus 3.6kg for boys). On discharge, BMI centile rose in girls to 9th and in boys to >25th. The mean weekly weight gain of 930g is at the upper end of recommended and above the 800g associated with better outcome. Recommended weight gains were achieved in all but weeks 9, 10 &11. 12/20 (60%) needed oral nutritional supplementation. 3/20 (15%) needed some NG feeding due to insufficient oral intake.

Other issues

9/20 (45%) suffered with constipation during stay. 7/20 (35%) children had undergone recent orthodontic work. 10/20 (50%) were commenced on anti-depressants.

Hospital Stay and discharge

The mean hospital stay was 38 days (range of 7-76 days). The average length of stay for those on psychotropic medication was longer (52 days) than for those not requiring medication (24 days). Most patients were discharged to CAMHS with 3 patients requiring residential treatment. Four patients required re-admission.

Discussion

Admission through A&E is not ideal. Beds may be unavailable. No admissions came via CAMHS and presenting BMI centile was not always in the higher risk category. Perhaps a lack of awareness of CAMHS among parents/G.Ps/schools contributes to this picture. The hospital should not be the first port of call unless the child is medically unstable. The relatively high male showing corroborates recent research indicating increased male prevalence. Girls are presenting to hospital sooner post onset than boys which could suggest better awareness and detection of AN in girls. It is a concern that the overall mean age of onset was estimated at 6 months prior to seeking treatment. Onset of AN in childhood without prompt intervention may worsen prognosis and weight restoration is more challenging as energy requirements can be greater at low weight. Early detection and treatment in the community would be preferable to later hospitalisation. Presentation age in this study is estimated at 13.5yo which is 6 mo earlier than 2002 estimates suggesting AN is presenting at an earlier age. The large increase in admissions to CUH over the past decade mirrors UK figures indicating AN is an area of evolving and increasing service needs particularly in the paediatric setting.

There is no consensus on what BMI centile necessitates hospitalisation. The Royal College of Psychiatrists suggest that anything lower than the 2nd centile is probably appropriate[11]. The admission BMI centile for girls fell into this category. Boys, presenting on 9th, were just outside. Weight gain rate during admission has been considered a significant predictor of outcomes. As described in the results, the recommended weekly gain was achieved weeks 1-8. The average weekly gain was >800g which is associated with better prognosis. Given the high cost of keeping a child in hospital it is important to ensure maximal and consistent weight gain. Given poorer weight gains seen in latter weeks there may be little benefit in a prolonged admission. However, numbers were small so this should be interpreted with caution. Most patients were food restricting on admission, therefore, achieving dietary compliance and weight gain with this group was a challenge that appears to have been achieved. Over-exercising (>2hrs/day uncontrolled exercise) prior

to admission put patients in the high risk category as defined by the Junior Marsipan group[7]. This was controlled during admission by close supervision. Constipation was common during admission. It is important to be mindful of this due itsâ effect on an already dulled appetite and also the effect of impaction on weight. Treating constipation can be challenging as it is inappropriate to prescribe laxatives or exercise. Prune juice was used to good effect in CUH.

A number of patients had commenced orthodontic treatment prior to onset of AN. When braces are fitted and frequently adjusted, the teeth loosen and move causing pain. Oral pain must be considered in cases of unintentional weight loss which could later precipitate disordered eating. Sometimes dental professionals may discourage certain foods if they interfere with treatment which the â perfectionistâ child may over-interpret. Although no Irish figures are available on the prevalence of orthodontic treatment there is UK data estimating that 14% of all 15 year olds have orthodontics[12]. In our study 35% would seem to be disproportionally high. Future research should explore the relationship of orthodontics to weight loss. The average length of hospital stay is more than 5 weeks. Inpatient stay is expensive and requires much resource in terms of staff training and MDT input. Education sessions have been arranged for staff to raise awareness of the strict nature of caring for a child with AN on the ward. The ill child with AN may try to manipulate the meal plan with less experienced or new members of staff. It is vital that the child not feel they are colluding and thus controlling aspects of their care. 10/20 (50%) of this group were commenced on psychotropic medication due to entrenchment in anorexic thoughts. The more difficult co-morbid anxiety/depression may be responsible for the significantly longer hospitalisation in this group.

While AN is best treated in the community it is most successful when the illness is in the early stage. In this study, onset of illness does appear to significantly predate hospitalisation. Awareness at a community level of the signs and symptoms of AN may facilitate earlier treatment and negate the need for hospitalisation. It is important to be aware of the trend towards younger onset of AN and also the increasing incidence in boys. AN may look different nowadays and we must be ahead of the curve given itsâ high mortality rate. The dramatic increase in AN presentations in CUH in the past decade may be mirrored nationally and this will have implications on community and acute services. Provisions will certainly need to be made in the planning of the new paediatric hospital for dedicated beds and also specialist medical, nursing and dietetic posts. Overall, treatment of AN in CUH is successful with optimal weight gains and dietary compliance achieved during stay.

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Acknowledgements

G Kenny, Research Manager, Dept. of Research; and the Dietetic Department, Childrenâ s University Hospital, Temple Street, Dublin 1.

References

1. NICE Guidelines. Eating Disorders - Core interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders. CG9. London. 2004.

2. Central Statistics Office. Census Ireland. Cork: Stationary Office. 2002

3. Answer to parliamentary question by Care Services Minister Phil Hope, 17th February 2009.

4. The Prevalence and Correlates of Eating Disorders in the National Co morbidity Survey Replication, Biological Psychiatry 61, February 2007.

5. Treasure J. (2009) A guide to the medical risk assessment for eating disorders, Kings College London, South London and Maudsley NHS Foundation Trust. www.eatingresearch.com

6. Yon L, Doyen C, Asch M, Cook-Darzens S, Mouren MC. Treatment of Anorexia Nervosa in young patients in a special care unit at Robert-Debre Hospital, (Paris): guidelines and practical methods. Arch Pediatr. 2009; 16:1491 â 8.

7. Report from the Junior MARSIPAN group, Junior MARSIPAN: Management of Really Sick Patients under 18 with Anorexia Nervosa, draft for consultation guidelines, January 2011.

8. Keel P, Brown T. Update on course and outcome in eating disorders. Int J Eat disord. 2010; 43:195-204.

9. De Zwaan M, Aslam Z, Mitchell JE. Research on energy expenditure in individuals with eating disorders: a review. Int J Eat Disord. 2002; 32:127â 34.

10. Lund BC, Hernandez E, Yates W, Mitchell J, McKee P, Johnson C. Rate of inpatient weight restoration predicts outcome in anorexia nervosa. Int J Eat Disord. 2009; 42:301-05.

11. Royal College of Psychiatrists. Guidelines for the Nutritional Management of Anorexia Nervosa. London. 2004.

12. Chestnutt IG, Burden DJ, Steele JG, Pitts NB, Nuttall NM, Morris AJ. The orthodontic condition of children in the United Kingdom. Brit Dent Journal. 2006; 200: 609-12.