Evaluation of Older Adults Hospitalized with a Diagnosis of Failure to Thrive

Linas Kumeliauskas, MD1, Karen Fruetel, MD, MEd2, Jayna M. Holroyd-Leduc, MD2

1Department of Medicine, University of Calgary, Calgary, AB; 2Section of Geriatric Medicine, Department of Medicine, University of Calgary, Calgary, AB

DOI:http://dx.doi.org/10.5770/cgj.16.64

ABSTRACT

Background

Older adults are sometimes hospitalized with the admission diagnosis of failure to thrive (FTT), often because they are not felt safe to be discharged back to their current living arrangement. It is unclear if this diagnosis indicates primarily a social admission or suggests an acute medical deterioration. The objective of this study was to explore the level of acuity and medical investigations commonly conducted among older hospitalized adults with a diagnosis of FTT.

Methods

We conducted a retrospective cohort study at three hospitals in Calgary, Alberta. Data were extracted from the electronic medical records of the 603 admissions of patients 65 years or older with a diagnosis of FTT between January 2010 and January 2011. Markers of medical acuity were evaluated.

Results

The vast majority of patients had short hospital stays. Specialist physicians were consulted for 323 cases (54%). Allied health-care professionals were consulted in 151 cases (25%). While in hospital, patients underwent extensive investigations, including CT scans, ultrasounds, and echocardiograms. Many patients received IV fluids (71%) and IV antibiotics (35%).

Conclusions

The data suggest that acute illnesses, and not social factors, were the primary reason for admission among those given a diagnosis of FTT.

Key words: failure to thrive, older adults, level of acuity

INTRODUCTION

Hospital overcapacity rates and emergency department (ED) waiting times are important issues currently being faced by the Canadian medical system.1 There is increasing pressure to reduce health-care costs and diminish unnecessary hospital admissions and ED visits. Of particular concern are social admissions, where patients are admitted to the hospital primarily for social reasons including inadequate supports and caregiver burnout, or to await placement in a long-term care (LTC) facility.2 Older adults are sometimes hospitalized with the admission diagnosis of failure to thrive, often because they are not felt safe to be discharged back to their current living arrangement.3,4,5,6,7 The diagnosis of failure to thrive can be non-specific when the exact reasons for hospitalization are poorly understood. It is unclear if this diagnosis is used to document a social admission or if it may actually suggest an admission for yet-to-be-diagnosed acute medical conditions.

Failure to thrive (FTT) is a medical term most often used in the pediatric population to describe a child who is not growing along the expected trajectory.3,8 Failure to thrive, however, is also a diagnosis used in the geriatric population. The prevalence of failure to thrive is unclear, but it appears to be common in the aging population.4 A review of the medical literature identified six studies related to the diagnosis of failure to thrive among older adults, all of which were small observational studies.3,5,6,7,8,9

FTT does not have a universally agreed definition in the adult population. The term failure to thrive within the geriatric population was first used in 1973 by Hodkinson.10 He described it in older adults who often have multiple medical conditions, experiencing loss of appetite, weight loss, and cognitive issues. Evans11 and Roubenoff and Harris12 described failure to thrive as a syndrome of sarcopenia associated with aging. Currently, failure to thrive is often used to describe a syndrome of global decline that occurs in older patients as an aggregate of frailty, cognitive impairment, and
functional disability, complicated by medical comorbidities and psychosocial factors. The United States National Institute of Aging described FTT as a “syndrome of weight loss, decreased appetite and poor nutrition, and inactivity, often accompanied by dehydration, depressive symptoms, impaired immune function, and low cholesterol.” Other authors describe FTT as a more generalized syndrome involving a complex interaction of physiological, social, and psychological issues leading to functional and cognitive decline and eventually death.

For most clinicians, medical causes for failure to thrive are not easily evident. Older patients are predisposed to FTT for both age related and sociodemographic reasons such as social isolation, inadequate social supports, and low socioeconomic status. The available literature suggests that a patient’s medical, functional, nutritional, and psychological status should be evaluated to determine the causes of FTT. Dementia, depression, delirium, and chronic diseases can all accompany the diagnosis of FTT.

FTT is an important medical diagnosis that has been found to be associated with increased admission rates to the hospital, low level of independence in all activities of daily living, and cognitive impairment. FTT appears to help predict worse outcomes including nursing home placement and death. FTT can be linked to unintentional weight loss that is accompanied by other abnormalities such as anemia of chronic disease, impaired immune function, hypoalbuminemia, and hypercholesterolemia. In older patients, it appears that failure to thrive may be related to frailty.

The fact that older patients can present with symptoms that differ from the classically taught disease presentations may contribute to the diagnosis of FTT. The differential diagnosis of FTT may include underlying chronic infection, malignancy, or organ failure. Impaired self-care and social isolation are often the accompanying characteristics of FTT. A patient diagnosed with FTT requires a comprehensive assessment including a thorough history from the patient and patient’s family members, physical examination, and selected laboratory studies. The management plan depends upon underlying etiologies, which are often diagnosed because of lack of experience, inadequate medical education, and incomplete policies.

The objective of this study was to review the hospitalizations of patients with a diagnosis of FTT, specifically exploring markers of acuity. The aim was to determine if patients admitted to hospital with this diagnosis required investigations suggestive of an acute medical admission versus being admitted more for psychosocial reasons.

METHODS

We retrieved data in de-identified format from the electronic medical record for 603 admissions of patients 65 years of age or older to any of the three Calgary area hospitals between January 2010 and January 2011. For inclusion, patients had to have a coded diagnoses that included failure to thrive (FTT). We did not define the diagnosis of failure to thrive further and accepted the diagnosis as given within the electronic record. Data elements retrieved included age in years, length of hospital stay in days, radiological investigations ordered, consults to in-patient services, and intravenous (IV) fluids and IV antibiotics ordered. Radiological investigations included CT scans, ultrasounds, and echocardiograms. In-patient consults were divided into physician consults by specialty and non-physician consults by type of allied health-care service provided. Consultations to physiotherapy and occupational therapy were not considered because of the high frequency of rehabilitation service consults among older patients admitted to Calgary area hospitals.

During the period of investigations, there were data from 603 hospital admissions available for analysis. Data were analyzed using descriptive statistics. Means and ranges were used to examine length of hospital stay and age. Rates were determined for radiological investigations ordered (by type) and consults to in-patient services (by physician specialty or allied health-care service provided). The percentage of patients with IV fluid ordered and IV antibiotics ordered was also determined. This project received approval from the Calgary Conjoint Health Research Ethics Board.

RESULTS

The mean age of the 603 patient admissions was 82.7 years. Nearly one in five was 90 years of age or older (Table 1). The average length of stay in the hospital was 12 days but ranged from 0 to 106 days. The vast majority of the patients had short hospital stays (less than 20 days).

Specialist physicians were consulted for 323 cases (54%) (Figure 1(a)). The most commonly consulted service was psychiatry. However, other physician specialists were consulted 90 times (14.9%). Endocrine consultation occurred 38 times (6.3%).

| Characteristic | N | % |
|---------------|---|---|
| **Age (years)** |   |   |
| 65-74          | 101 | 16.74 |
| 75-84          | 214 | 35.48 |
| 85-89          | 172 | 28.51 |
| 90 and older   | 116 | 19.22 |
| **Length of Stay (days)** |   |   |
| 0-20           | 480 | 79.6 |
| 21-40          | 71  | 11.77 |
| 41-60          | 32  | 5.3  |
| 61-80          | 10  | 1.65 |
| more than 80   | 10  | 1.65 |

KUMELIAUSKAS: FAILURE TO THRIVE IN OLDER ADULTS
also frequently consulted including geriatric medicine, gastroenterology, podiatry, and neurology. Allied health-care professionals were consulted in 151 cases (25%) (Figure 1(b)). Social work and the palliative care services were most frequently consulted, followed by the dietetic and spiritual care services. Many patients received consultations from more than one consulting service.

While in the hospital, patients underwent extensive investigations including CT scans (56%), ultrasound (23%), and echocardiograms (14%) (Table 2). Among the various sites for CT investigations, CT of the head was most frequently ordered followed by CT of the abdomen. Abdominal ultrasound was the most frequently ordered ultrasound investigation. Intravenous fluids were ordered for 71%, and 35% received IV antibiotic therapy. The high rate of investigations and extensive treatment supports the conclusion that these admissions were for acute medical issues. However, the markers of acuity considered were a collection of investigations and interventions that are imposed on the patient by the health-care team, rather than features of the patient’s presentation itself. The results reflect practice patterns of hospital staff. If one assumes that such investigations and consultations were indeed necessary and appropriate, then patients admitted with a diagnosis of FTT appear to be experiencing acute medical illness.

Older patients account for 12% to 21% of all ED visits and they are at risk for the adverse health outcomes within the ED. Although the number of older adults within EDs is high, the admission diagnosis for this group of patients tends to be less accurate, mostly because of atypical disease presentation, polypharmacy, and multiple comorbidities. The medical complexity of the older patient may result in a diagnosis of FTT. According to Canadian institute for Health information, almost half of the patients (49.3%) admitted from the ED to the hospital in Canada were older patients. Cardiovascular diseases and infectious causes accounted for a large number of these hospital admissions.

**DISCUSSION**

A diagnosis of FTT appears to be common among hospitalized older patients. Overall, the study results indicate that a diagnosis of FTT is used not for the primary purpose of social admissions but, instead, indicates admission for the management of acute medical illness.

These patients had relatively short hospital stays and received consultations from various medical specialists and allied health-care professionals. The relatively short hospital stay suggests an admission for acute medical reasons and not to await LTC placement. In Canada, the time spent in an alternate level of care hospital bed awaiting LTC can be extensive, well beyond 12 days.

A high prevalence of cognitive, psychiatric, and functional issues may be inferred from the relatively high consultation rates to psychiatry and geriatric medicine specialists. Nearly one in four patients was assessed by social work and by palliative care services, which might indicate the presence of psychosocial issues and end-stage disease.

While in the hospital, more than half of patients were investigated extensively, presumably in an attempt to find the underlying cause(s) of their acute medical decline. IV fluids were administered in the vast majority of patients and many required IV antibiotic therapies. The high rate of investigations and extensive treatment supports the conclusion that these admissions were for acute medical issues. However, the markers of acuity considered were a collection of investigations and interventions that are imposed on the patient by the health-care team, rather than features of the patient’s presentation itself. The results reflect practice patterns of hospital staff. If one assumes that such investigations and consultations were indeed necessary and appropriate, then patients admitted with a diagnosis of FTT appear to be experiencing acute medical illness.
including coronary artery disease, pneumonia, and urinary tract infection/urosepsis. Often, older patients present to acute care hospitals with several chronic conditions, which can contribute to rapid functional decline in hospital. Besides acute illness, nosocomial infection, polypharmacy, immobility, and malnutrition admissions are often complicated by increased rate of falls and delirium. Given the higher rate of hospital-acquired adverse events among older patients, some of the investigations and treatments may have been related to events that occurred after admission.

This situation could be improved by improving the triage of older patients presenting to the ED along with providing further education of medical students and emergency room staff about the normal processes of aging and aged-related health issues. The outcomes for hospitalized older patients could be further improved within the hospital by applying a multidisciplinary multicomponent approach to help ensure early mobilization and aggressive prevention of falls and delirium.

Although this study included all hospital admissions related to a diagnosis of FTT in older patients over a one-year period, it included data only from hospitals in Calgary, Alberta. However, these hospitals provide services not only to the residents of the city but also to those residing in other smaller communities within Southern Alberta and parts of British Columbia. Although Calgary has an ethnically diverse population and its hospitals provide services to all socioeconomic groups, information about the patient’s ethnicity and other demographic information was not available.

CONCLUSION

A diagnosis of FTT may indicate health issues that are not easily evident. Patients hospitalized with this diagnosis appear to have acute medical issues. Therefore, a diagnosis of FTT suggests the need for a comprehensive assessment and initiation of an appropriate management plan.

CONFLICT OF INTEREST DISCLOSURES

The authors declare that no conflicts of interest exist.

REFERENCES

1. Canadian Association of Emergency Physicians. Position Statement on Emergency Department Overcrowding. 2009 June. Available from: http://caep.ca/sites/default/files/caep/files/edoc_position_statement_board_approved_june_2009_gl.pdf Accessed July 08, 2012.
2. Oliver D. ’Acopia’ and ‘social admission’ are not diagnoses: why older people deserve better. J R Soc Med. 2008;101(4):168–74.
3. Osato EE, Takano Stone J, Phillips SL, et al. Clinical manifestations. Failure to thrive in the elderly. J Gerontol Nurs. 1993;19(8):28–34.
4. Palmer RM. “Failure to thrive” in the elderly: diagnosis and management. Geriatrics. 1990;45(9):47–50, 53–55.
5. Hildebrand JK, Joos SK, Lee MA, et al. Use of the diagnosis “failure to thrive” in older veterans. J Am Geriatr Soc. 1997;45(9):1113–17.
6. Berkman B, Foster LW, Campion E. Failure to thrive: paradigm for the frail elder. Gerontologist. 1989;29(5):654–59.
7. Katz IR, Beaton-Wimmer P, Parmelee P, et al. Failure to thrive in the elderly: exploration of the concept and delineation of psychiatric components. J Geriatr Psychiatry Neurol. 1993;6(3):161–69.
8. Higgins PA, Daly, PJ. Adult failure to thrive in the elderly rehabilitation patient. Rehabil Nurs. 2005;30(4):152–59.
9. Aguilera A, Pi-Figuew M, Arellano M, et al. Prevalent cognitive impairment and failure to thrive syndrome in patients who died in a geriatric convalescence hospitalization unit. Arch Gerontol Geriatr Suppl. 2004;(9):7–11.
10. Hodkinson HM. Non-specific presentation of illness. BMJ. 1973;4(5884):94–96.
11. Evans WJ. What is sarcopenia? J Gerontol Series A. 1995;50A:5–8.
12. Roubenoff R, Harris TB. Failure to thrive: sarcopenia and functional decline in the elderly. Clin Geriatr Med. 1997;13(4):613–22.
13. Verdery RB. Clinical evaluation of failure to thrive in older people. Clin Geriatr Med. 1997;13(4):769–78.
14. Winograd CH, Gerety MB, Chung M, et al. Screening for frailty: criteria and predictors of outcomes. J Am Geriatr Soc. 1991;39(8):778–84.
15. Reuben DB, Siu AL, Kimpau S. The predictive validity of self-report and performance-based measures of function and health. J Gerontol. 1992;47(4):M106-10.
16. Markson EW. Functional, social and psychological disability as causes of loss of weight and independence in older community living people. Clin Geriatr Med. 1997;13(4):639–52.
17. Newburn VB. Failure to thrive. A growing concern in the elderly. J Gerontol Nurs. 1992;18(8):21–25.
18. Grossmann FF, Zunbrunn T, Frauchiger A, et al. At risk of undertriage? Testing the performance and accuracy of the emergency severity index in older emergency department patients. Ann Emerg Med. 2012;60(3):317–25.
19. Aminzadeh F, Dalziel WB. Older adults in the emergency department: a systematic review of patterns of use, adverse outcomes, and effectiveness of interventions. Ann Emerg Med. 2002;39(3):238–47.
20. Canadian Institute for Health information. Hospitalization rates in Canada continue to decline, but average length of stay rises. Key Highlights: Hospitalizations and emergency department visits. Available from: http://www.cihi.ca/CIHI-ext-portal/internet/en/Document/health+system+performance/indicators/health/RELEASE_18MAY10 Accessed July 10, 2012.
21. The Healthcare Cost and Utilization Project. Exhibit 2.1: Most frequent principal diagnoses. Number of discharges, percent distribution, rank, and growth of the most frequent principal diagnoses for inpatient hospital stays, 1997 and
2008. Available from: http://www.hcup-us.ahrq.gov/reports/factsandfigures/2008/exhibit2_1.jsp Accessed July 13, 2012.
22. Donowitz GR, Cox HL. Bacterial community-acquired pneumonia in older patients. *Clin Geriatr Med*. 2007;23(3):515–34.
23. Fry AM, Shay DK, Holman RC, *et al*. Trends in hospitalizations for pneumonia among persons aged 65 years or older in the United States 1988–2002. *JAMA*. 2005;294(21):2712–19.
24. Ackermann RJ, Monroe PW. Bacteremic urinary tract infection in older people. *J Am Geriatr Soc*. 1996;44(8):927–33.
25. Buurman BM, Hoogerduijn JG, de Haan RJ, *et al*. Geriatric conditions in acutely hospitalized older patients: prevalence and one-year survival and functional decline. *PLoS ONE*. 2011;6(11):e26951.
26. Graf C. Functional decline in hospitalized older adults. *Am J Nurs*. 2006;106(1):58–67.
27. Zawada ET Jr. Malnutrition in the elderly. Is it simply a matter of not eating enough? *Postgrad Med*. 1996;100(1):207–08.
28. Inouye SK, Brown CJ, Tinetti ME. Medicare nonpayment, hospital falls, and unintended consequences. *N Engl J Med*. 2009;360(23):2390–93.
29. Koster S, Hensens AG, Schuurmans MJ, *et al*. Consequences of delirium after cardiac operations. *Ann Thorac Surg*. 2012;93(3):705–11.
30. Zisberg A, Shadmi E, Sinoff G, *et al*. Low mobility during hospitalization and functional decline in older adults. *J Am Geriatr Soc*. 2011;59(2):266–73.

**Correspondence to:** Linas Kumeliauskas, MD, Department of Medicine, University of Calgary, North Tower Room 933, Foothills Medical Centre, 1403 - 29th Street NW, Calgary, AB T2N 2T9, Canada

**E-mail:** linas.kumeliauskas@albertahealthservices.ca