Geriatric Medicine in the Emergency Department

Abstract

Studies suggest older adults attending emergency departments (ED) benefit from specialist geriatric medicine evaluation. Findings from a pilot ED Geriatric Medicine (GM) liaison service in our 480-bed university hospital are presented. This is not a randomized controlled trial. Service comprised GM liaison (1 consultant and 1 trainee) and GM-led sessions during daytime working hours. Senior ED personnel selected appropriate patients. GM service also took over ED medical admissions aged e80, 1 in 9 days from General Internal Medicine (GIM). 49% of 284 patients (88.5–6.8 years) referred, were discharged from ED with appropriate follow-up. Inpatient analysis comprised 51% admitted to GIM, GM and specialist services as per on-call rota and 268 patients taken over from GM. Patients under GM had shorter length of stay (p<0.001). The findings suggest specialty specific geriatric medicine management of the older adult presenting to ED can improve service and patient outcomes.

Introduction

The number of older adults attending the emergency department (ED) is rising with the ageing population. Frequently the patients social circumstances and supports have to be taken into consideration on presentation to EDs together with their medical illness. Frail older adults with acute illness presenting to ED can pose challenges because of atypical, non-specific symptoms, with delayed evaluation due to lack of classical symptoms found in younger persons. There are proposals of EMGs designed with the older adult in mind with optimal surroundings, equipment and senior specialist personnel. Our 480-bed university hospital has an estimated catchment population of 350,000 with approximately 10,000 persons aged e80 years. In 2009, there were 38,164 attendances to our ED, 36% aged e65 years and 11% aged e80 years. In the same year, there were 9,276 admissions, 48% aged e65 years and 21% aged e80 years.

Overall 54 (13%) inpatients died during their admission period. Mean LOS of the patients who died was 20.4 +/- 25.6 days. Sixty-seven (16%) of the admissions were NH residents and of these 14 (21%) died during the admission period. Of the remains one hundred and forty-six (51%) patients were admitted under the GM team on call of the day (including physiotherapy and occupational therapy or specialist follow-up). The one month representation rate to the ED for GM liaison service comprised consultant geriatrician-led sessions per week , expanding to three consultant-led and two senior trainee-led sessions per week subsequently during normal daytime working hours. Data was collected from this pilot service over a period of 2 years and 9 months. Appropriate referral of patients was by senior ED personnel if they were felt to benefit from GM input including patients with multiple medical diagnoses, frailty, dementia, delirium, falls, syncopic and other common presentations in older adults. Patients were assessed in ED. Physiotherapy and occupational therapy input were available where required. The allied health professionals were from existing personnel with no new allocation of resources.

The general internal medicine (GIM) service in our hospital consists of specialist physicians (gastroenterology, respiratory, nephrology, endocrinology, geriatric medicine and rheumatology) and a general internal physician partaking in the acute GM on-call rota admitting patients via the ED. As part of the pilot programme, the GIM service also took over of medical admissions aged e80 years, every 1 of 9 days from one of the GIM services. Limited manpower did not allow take over care of all older patients by the GM department. This paper also compared the outcome of patients seen by the EDGM liaison team and subsequently admitted under GIM care versus patients who were admitted under the GM team. This compared GM input on a consultation basis at the point of admission versus GM care throughout the course of admission. Collection of data was prospective and descriptive statistics were used to present findings with statistical analysis with JMP v8 where appropriate.

Results

The ED referred 285 patients (mean age 83.5 +/- 6.8 years) to the EDGM liaison service. Sixty-eight percent were female and one hundred and thirty-nine (49%) were 80 years or older. One hundred and thirty-nine (49%) patients were transferred from the ED with appropriate follow-up including day hospital, rapid access GM outpatients, general practitioner, community services including physiotherapy and occupational therapy or specialist follow-up. The one month representation rate to the ED after discharge was 22% with 8% admitted to hospital on subsequent presentation.

The remainder one hundred and forty-six (51%) patients were admitted under the GM team on call of the day (including the GM service which participates in the ED on-call rota) or other specialist services including cardiology, stroke, general surgery, orthopaedics and urology. Two hundred and sixty-eight patients e80 years were taken over from the GIM service every 1 of 9 days. This gave a total of 414 inpatients (mean age 84.6 +/- 5.5 years) for analysis. Of these patients, 300 (73%) were admitted under GIM, 71 (17%) under GM and 43 (10%) under other specialist services. Figure 1 illustrates the pathway of derivation of the two main groups of inpatients for comparison.

Overall 54 (13%) inpatients died during their admission period. Mean LOS of the patients who died was 20.4 +/- 25.6 days. Sixty-seven (16%) of the admissions were NH residents and of these 14 (21%) died during the admission period. Of 347 patients admitted from home, 12% died and 14% were discharged to a NH. In total 26% of patients admitted from home did not return to their own home after admission to hospital. Comparison of LOS was done for 323 patients discharged alive from the GM and GM service. Patients discharged from other specialist services were excluded from LOS analysis.
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For 320 patients discharged alive from hospital with 1 month follow-up data, the one month ED repeat attendance rate was 14.7% (GM) vs. 19.4% for GIM (p<0.001). The readmission rate one month after discharge from hospital was 14.7% (GM) vs. 19.4% for GIM (p=0.37). The readmission rate one month after discharge from hospital was 14.7% (GM) vs. 19.4% for GIM (p<0.001) days for GM. Mean LOS of a patient admitted from home and discharged to a NH was 62.9 +/- 35.9 days. When LOS analysis excluded patients discharged to a NH, mean LOS was 25.0 +/- 18.6 days for the GIM and 15.2 +/- 16.3 (p<0.0001) days for GM. Mean LOS of a patient admitted from home and discharged to a NH was 62.9 +/- 35.9 days. Twenty-three percent of patients admitted from home under GM care were discharged to NH care in comparison to 14% of patients under GM care (p=0.11).

As the factors affecting specialist LOS may be different from the GIM and GM service. Mean LOS of 62 patients discharged from GM care was 33.5 +/- 27.7 days compared to 20.3 +/- 25.0 days (p<0.001) of 281 patients under GM care. When a NH was involved in the hospital discharge, the LOS was 55.0 +/- 22.6 days for GM vs. 15.2 +/- 16.3 (p<0.0001) days for GM. Mean LOS of a patient admitted from home and discharged to a NH was 62.9 +/- 35.9 days. Twenty-three percent of patients admitted from home under GM care were discharged to NH care in comparison to 14% of patients under GM care (p=0.11).

Discussion

It is known that older adults presenting to the ED are more likely to be frail, with a higher level of urgency in their visits, more likely to be admitted or have repeat ED visits and have a higher rate of adverse outcomes than younger adults. They may have a complex, frail elderly adults presenting to our ED could benefit from a GM review and treatment with appropriate follow-up plan. Although there was a hospital admission rate of 8% of patients within one month of discharge from ED, this compared favourably to a 7.5% to 17.1% one month hospitalisation rate of older patients, keeping in mind that there are differences in community follow-up services. No local data on ED repeat attendance is currently captured for comparison.

Our findings also showed positive outcomes in patients under GM, with shorter LOS (p<0.001). The shorter LOS in the GM group may be related to various factors including regular consultant or specialist GM input with a comprehensive geriatric assessment (CGA) with the multidisciplinary team (MDT) and weekly MDT meetings discussing the progress and discharge planning process of each patient. Previous reviews had shown that CGA and acute geriatric units can reduce functional decline and increase likelihood of living at home post hospital discharge.

A shorter LOS with MTG input could reduce the number of potential inpatient complications including hospital associated infections, delirium, medication error etc. GM care is likely more effective than a consultation service to the GIM in the GM team had direct responsibility for the patient, ensuring compliance with and implementation of diagnostic, treatment, rehabilitation and discharge plan.

The findings also illustrate the frequency of adverse outcomes in this frail, vulnerable group. The overall higher hospital readmission rate admitted from a NH of 21%, was likely in keeping with the tertiles high frailty profile of this patient group. However, it is known that severity of acute illness is more important than medical co-morbidities in predicting outcomes in older patients admitted with a medical emergency, regardless of whether the patient was under the care of the GM or GIM team, is likely indicative of an inherently frail and at risk cohort. The weaknesses of this paper include the fact that this was not a RCT with subjects comprised only of an inpatient population, deemed in need of specialist GM input. However, the patients are representative of typical acutely unwell older adults presenting to the EDs and hospital admission systems across our country. The two groups of inpatients compared had reasonably well matched age profiles. LOS can be affected by the nature of community follow-up and can influence the discharge of the older adult. It is beyond the remit of this report to comment on the impact of service availability in the community.

The numbers analysed were small, leading to reduced statistical strength of analysis. The reasons for attendance to ED was also not recorded or considered in our analysis to concentrate on collection of basic demographic data and readmissions and ED repeat attendances as outlined above. The future developments for the GM care in our department include formalisation of the EDGM liaison service with GM clinical nurse specialist support; an inpatient NH liaison service and a patient pathway where patients are provided with a patient pathway card for ED discharge to support the discharge of the older adult. It is beyond the remit of this paper to comment on the impact of service availability in the community.

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The challenge.

Finding the best quality markers of care for the frail, elderly adult admitted unwell to the acute hospital remains a substantial proportion of older adults could also be discharged from the ED with a tailored treatment and follow-up plan. The argument of the relevance and appropriateness of current quality or outcome markers remain to be debated. Finding the best quality markers of care for the frail, elderly adult admitted unwell to the acute hospital remains a challenge.

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References

9. Simulation, direct admission of the older, frail adult under the GM has the potential to reduce LOS without adversely affecting other quality markers including the rate of ED repeat attendances and readmission to hospital. A substantial proportion of older adults could also be discharged from the ED with a tailored treatment and follow-up plan. The argument of the relevance and appropriateness of current quality or outcome markers remain to be debated. Finding the best quality markers of care for the frail, elderly adult admitted unwell to the acute hospital remains a challenge.
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