Original article

Reduced delays in A&E for elderly patients with hip fractures

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Published guidelines recommend early transfer of patients with hip fractures to hospital wards and avoidance of unnecessary delays in A&E. We describe a protocol whereby the liaison of an orthopaedic trauma co-ordinator with A&E reduced A&E-to-ward transfer times by 43%. Following introduction of the new protocol, 39% of hip fracture patients were in a ward bed within 3 h of admission to A&E compared to 4% previously. The new protocol also reduces administrative workload for the on-call orthopaedic SHOs.

Key words: Hip fractures – A&E-to-ward transfer time

Hip fractures tend to occur in elderly osteoporotic females who have significant co-morbidity and poor nutritional status. For these patients, long waits on trolleys in A&E before transfer to an in-patient ward, is uncomfortable, predisposes to pressure sores, and delays surgical intervention. Delay in surgical intervention may be associated with increased postoperative mortality in the short term, and poor functional outcome in the long term.^{1–4} Published guidelines⁵ recommend early transfer of patients with hip fractures to hospital wards and avoidance of unnecessary delays in A&E. However, up to 86% of hospitals in the UK may have no policy for ensuring that patients with hip fractures spend minimum time in A&E.⁶

Protocols have been described^{7,8} aimed at fast-tracking patients with hip fractures from A&E to in-patient wards. These relied on reserving trauma in-patient beds for patients with hip fractures. Furthermore, they relied on the duty orthopaedic SHO to clerk patients following admission to the trauma ward, rather than in A&E. However, it is difficult for trauma units with high turnover numbers to reserve beds specifically for hip

fracture patients. Clerking patients in the ward may result in some patients with wrongly diagnosed hip fracture being unnecessarily admitted. Also, transferring patients requiring repeat or further X-rays from the ward to the radiology department can be inconvenient for the patient and impose extra work-load on ward nursing staff.

Unnecessary waits in A&E may occur because of delays in performing radiological and haematological investigations, in the orthopaedic SHO going to A&E to clerk the patient, and in liaising with the trauma ward for an in-patient bed. During working hours, delays in the on-call orthopaedic SHO attending A&E may particularly occur, as SHOs have theatre sessions and clinics. We introduced a protocol whereby a trauma co-ordinator (a senior nurse with experience in orthopaedic nursing) liaises with A&E to reduce unnecessary delays for hip fracture patients.

Patients and Methods

The A&E department of the Manchester Royal Infirmary has an annual attendance rate of about 96,000 patients.

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Figure 1 Protocol introduced for reducing waiting times in A&E for patients with hip fractures.

Every year, about 250 patients with hip fractures are admitted. Up to January 2001, a patient with clinical suspicion of hip fracture presenting to A&E was triaged, examined by an A&E doctor, and had basic radiological (hip X-rays, chest X-ray) and haematological (FBC, U&Es) investigations performed. If a hip fracture was confirmed radiologically, the A&E doctor would refer the patient to the orthopaedic SHO on call who would attend A&E and clerk the patient. If the orthopaedic SHO agreed that a hip fracture was present, the hospital bed manager was informed who would try and find a bed. Once a bed became available, the patient was transferred to the ward.

In January 2001, a new protocol was introduced (Fig. 1), whereby a trauma co-ordinator (a senior nurse with experience in orthopaedic nursing and employed by the trauma and orthopaedic department) would liaise with A&E to reduce transfer times. According to this protocol, upon presentation of a patient with a high clinical suspicion of hip fracture to A&E (during working hours 07:30 to 17:00, Monday to Friday, when the trauma co-ordinator is on

duty), the triage nurse, or the nurse who is looking after the patient in A&E, informs the trauma co-ordinator. The trauma co-ordinator attends A&E and ensures that all the required radiological and haematological investigations are done promptly, by liaising with the radiology department, porting services and phlebotomist. At the same time, the trauma co-ordinator liaises with the trauma ward for a bed, in case the patient has a hip fracture and thus needs admission. Once the presence of hip fracture is confirmed radiologically, the haematological investigations are done, and the process of finding a hospital bed is set in motion, the trauma co-ordinator and the referring A&E doctor inform the orthopaedic SHO on-call of the situation. If the orthopaedic SHO who clerks the patient agrees with the diagnosis, the patient is transferred to the ward once a bed is available. The trauma co-ordinator again liaises with the porting services and trauma ward for early transfer of the patient.

A prospective study of the A&E waiting time (presentation to A&E to admission to ward) for 116 consecutive patients was performed following introduction of the new

Figure 2 Time spent in A&E for patients with hip fractures (A) prior ($n = 25$) and (B) after ($n = 52$) introduction of the trauma co-ordinator protocol.

protocol. This was compared with the A&E waiting times of 50 patients presenting just prior to the introduction of the new protocol.

Results

A group of 50 patients with hip fractures admitted to this hospital via A&E prior to the new protocol were examined: 25 presented to A&E during working hours (07:30–17:00, Monday to Friday) and 25 out of hours. The second group consisted of 116 patients admitted via A&E (52 during working hours and 64 out of hours) following introduction of the new protocol. The median age of all patients was 77 years (range, 59–96 years).

Introduction of the new protocol reduced the median A&E-to-ward transfer time for patients presenting during working hours by 43%, from 7 h 4 min (range, 2 h 46 min to 11

h 50 min) to 4 h (range, 1 h 8 min to 11 h 58 min; $P < 0.0001$, Mann-Whitney U-test; Fig. 2). Following introduction of the new protocol, 39% of hip fracture patients were in a ward bed within 3 h of admission to A&E compared to 4% previously.

There was no significant reduction in the A&E-to-ward transfer time for patients presenting out of hours prior to and after introduction of the new protocol (median, 5 h 56 min prior to new protocol *versus* 4 h 8 min after the new protocol; $P = 0.07$, Mann Whitney U-test). There was no significant difference in the total number of patients attending A&E or in the total number of patients admitted to the hospital monthly before and after changing protocol. There was no significant change in monthly total admissions to the trauma unit or in the number of ward beds available between the two periods. During the study period, there were no cases where the trauma co-ordinator was called unnecessarily to the A&E department.

Discussion

Previously described protocols^{7,8} of fast-tracking patients with hip fractures relied on the patients being clerked by the orthopaedic SHO in the ward rather than in A&E, and on reserving ward beds for hip fracture patients. However, clerking such patients in the ward may result in unnecessary admissions and reserving beds in busy trauma units may not be practical. We believe that patients with hip fractures often wait for long periods in A&E because of delays in ordering their radiological or haematological investigations, delays in transferring to and from the radiology department, delays in liaising with the trauma ward for a bed and delays in the orthopaedic SHO, who is often occupied in theatre or in clinics, in going to A&E to clerk the patient. It is these various delays that we aimed to reduce.

A senior nurse with several years' experience in orthopaedic ward nursing was employed as a trauma-co-ordinator. The duties included organisation of theatre trauma lists and peri-operative care of trauma patients. Additional to these duties the trauma co-ordinator was involved in fast-tracking patients with hip fractures. A trauma co-ordinator, unlike the on-call orthopaedic SHO, is not attending clinics or theatre and thus is able to attend A&E as soon as a patient with hip fracture arrives. The search for a hospital bed is initiated early. Furthermore, liaison with the radiology department, porting services, and phlebotomists can result in the necessary investigations being performed promptly. The trauma co-ordinator ensures that the necessary investigations are done and the bed search is initiated before the on-call orthopaedic SHO is contacted. Knowing that investigations and bed requests are taken care of, on-call orthopaedic SHOs may be more willing to leave clinics and theatre for a short time to clerk the patient in A&E. In relation to this, the SHOs working in this unit expressed high satisfaction with the new system, as they are released from administrative work.

After introduction of the new protocol, a significant reduction in unnecessary delays was achieved, and almost

40% of patients are in a ward bed within 3 h. The protocol has reduced waiting times during working hours, when the bulk of A&E work-load occurs. Nevertheless, it is unfortunate that some patients still wait in A&E for prolonged periods of time. This situation, even in the presence of fast tracking systems, has been reported by others,⁹ and is mainly due to the unavailability of hospital beds.

Many trauma units in the UK employ trauma co-ordinators. Their active involvement can be effective in minimising delays in transfer of patients with hip fractures from A&E to in-patient wards and in reducing administrative work-load for duty orthopaedic SHOs. Availability of more hospital beds is essential to ensure further reduction in A&E delays.

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