

An Audit of AEReferrals to Fracture Clinics at the University Hospital Limerick

Abstract:

Sir

Decreasing healthcare budgets¹ are pressuring orthopaedic services to create efficient pathways of care such as the care of fractures referred from the A&E department. Since the referrals to these clinics are what determine a large proportion of the patient population, the clinical validity of these referrals contributes to the efficacy of these clinics. This begs the question, are the referrals to fracture clinics leading to any decrease in the clinical efficacy of this service?

Methods

101 consecutive patients referred from the A&E to UHL orthopaedics fracture clinics between September and October 2012 were retrospectively included. A retrospective chart review was conducted. Reason for referral, physician's level, diagnosis in clinic and intervention were recorded. True positives (TP) were referrals requiring orthopaedic follow-up or treatment. False negatives (FN) were referrals requiring no follow-up from the orthopaedic services. Positive predictive values (PPV) were calculated from these values.

Results

101 patients; 81.2% (82/101) TP and 18.8% (19/101) FN. The PPV for SHO, registrar consultant and clinical nurse specialists (CNS) were 93.8%, 82.1%, 83.3% and 60.0% respectively. 36.8% (7/19) of the FP referrals had no evidence of fractures clinically or radiologically when examined in outpatient clinics. 19.8% (20/101) of all referred patients were referred for sports related issues.

Discussion

Guidelines currently exist for fractures with sensitivities of 98-100% (Ottawa ankle rules)². However, these guidelines emphasize high sensitivities and negative predictive values (NPV) with low specificities and PPV to ensure fractures are never dismissed. The Ottawa ankle rules have demonstrated PPV of 0.25³. UHL demonstrated an overall PPV of 81.18%. In contrasting the PPV of previous studies our results demonstrate a high level of precision. Yet, there is still room for improvement. 70% of metatarsal fractures referrals were false positive (PPV 25.6%). The contrast in the PPV of metatarsal fractures to the overall PPV exemplifies a potential area for improvement. 36.84% (7/19) of the false positive referrals had no evidence of a fracture radiologically or clinically. These were non-scaphoid suspected fracture referrals. Thus, a third of the false positive referrals could be eliminated with accurate elimination of fracture in the A&E. 52.6% of false positives were referred by registrars (PPV 82.1%), 21.1% were clinical nurse specialists (PPV 60%) and 5.3% were SHOs (PPV 93.8%). This suggests that our results were not reflection of inexperienced doctors. Rather a reflection of the quantity of referrals from a given physician level rather than the quality. One possibility to increase efficiency is the creation of more specialized clinics. The only group of injuries significantly large enough to benefit from a specialized clinic would be sports injuries.

We recommend the development of referral guidelines. Focus should be on low clinical efficient injuries (metatarsal, radial and metacarpal fractures and elbow soft tissue injuries). As well, guidelines for injuries that do not require orthopaedic follow-up could help streamline patients to other services. There is potential for the development of specialized sports injuries clinics.

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