Epidemiology of Ankle Fractures in an East of Scotland Major Trauma Centre

Ahmed Elsayed, Aalap Asurlekar, Matthew Amer
Ninewells Hospital and Medical School, University of Dundee

Background

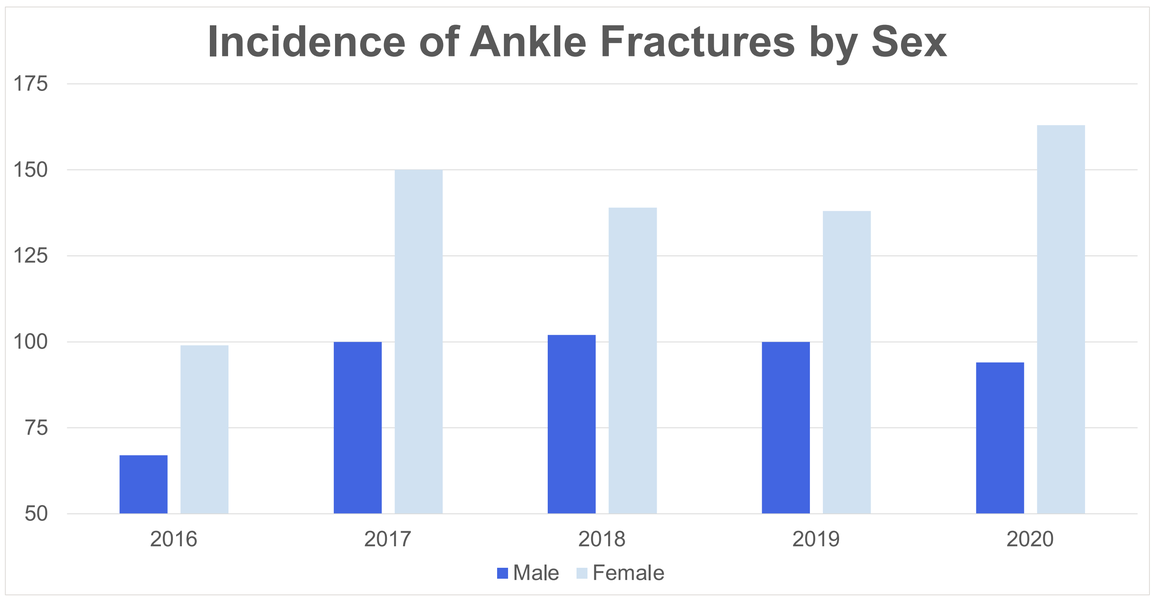
Epidemiological studies help inform the allocation of healthcare provisions in a population[1]. Ankle fracture rates are changing worldwide so it is important for communities to assess their local burden[2]. Therefore, our aim is to assess the incidence and epidemiology of ankle fractures presenting to Ninewells Hospital Major Trauma Centre (Scotland) over a 5-year period.

Methods

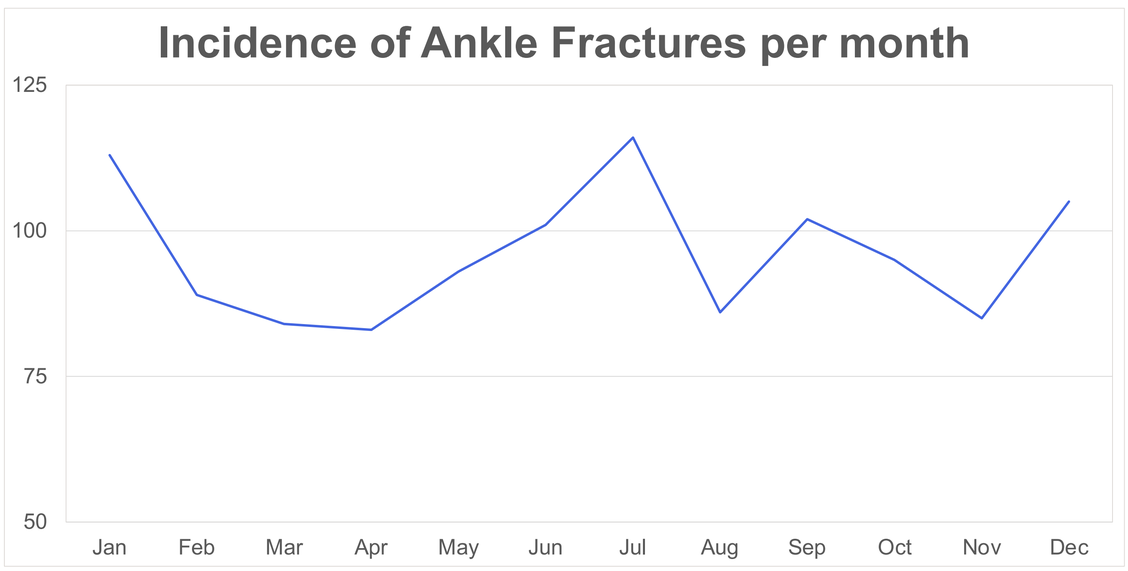
We gathered data on 1,126 ankle fractures found using the local trauma database between 2016 and 2020. Any patients that received conservative treatment or who were listed as returning with complications were excluded. For the remaining cases we collected and analysed data on patient age, sex, laterality and mechanism of injury.

Results

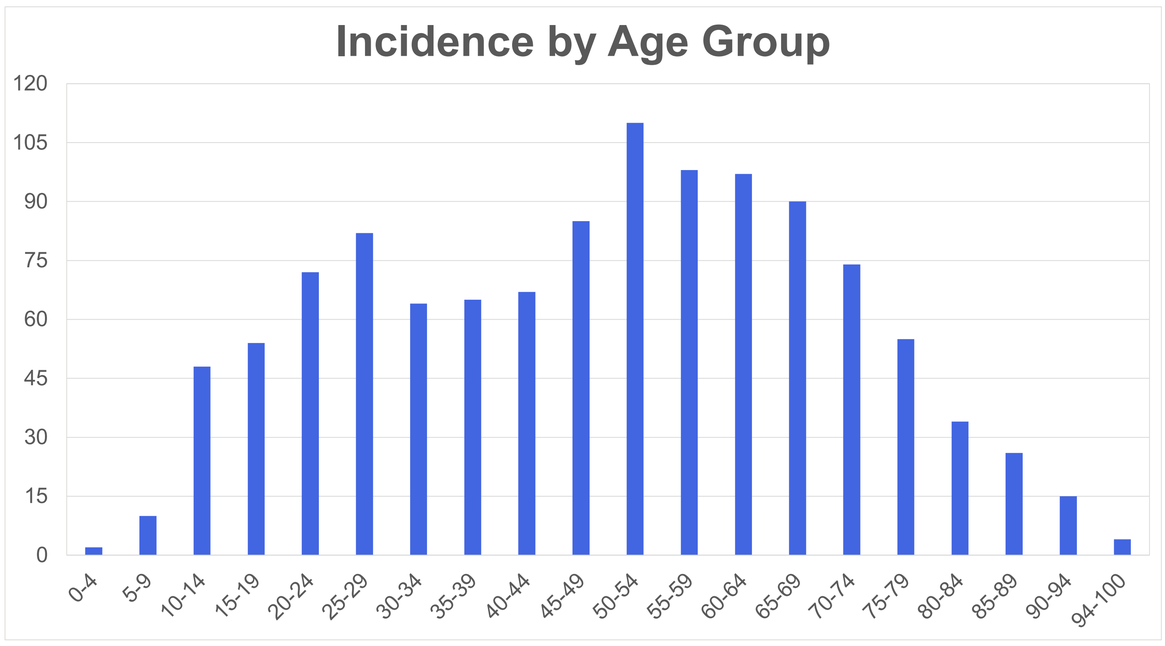
During the 5-year study period the annual incidence rate of ankle fractures increased by 55%. Of the 1,126 ankle fractures analysed, 463 were in males and 663 in females. Ankle fractures were consistently more common in females.



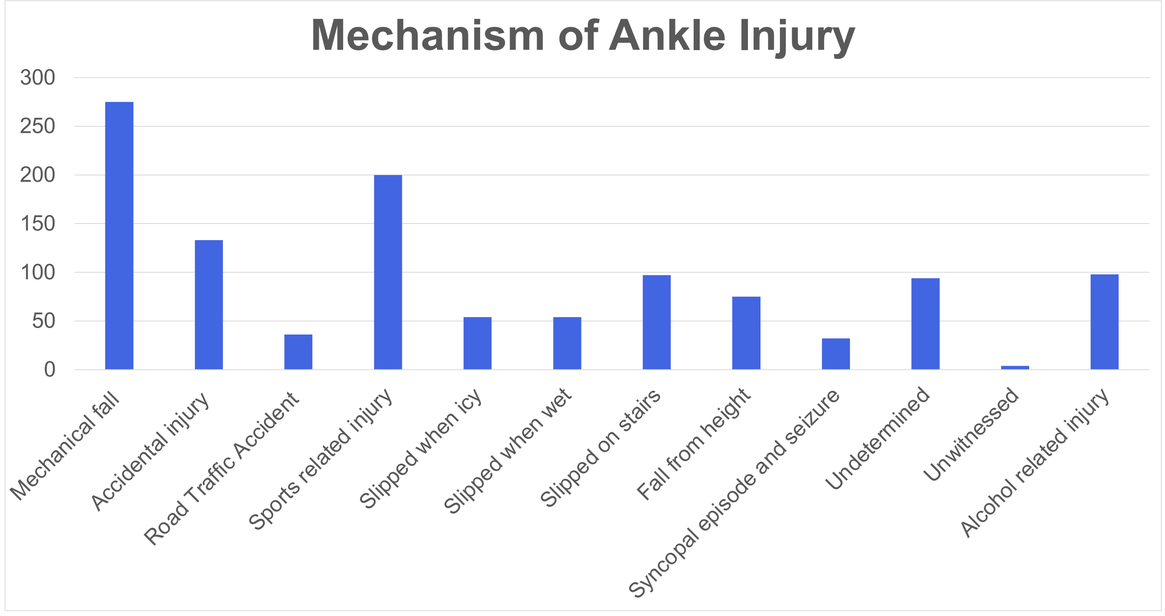
On average July, January and December months had the highest incidence of ankle fractures. The incidence trend follows a trimodal distribution.



The 50-54 age group had the highest incidence of ankle fractures. The incidence trend follows a bimodal distribution with another peak in the 25-29 age group.



Simple mechanical falls were the most common mechanism of injury, this was followed by sporting injuries and accidental injuries.



Conclusion

This study shows that the local incidence of ankle fractures is increasing. The data provides valuable trends in the number and demographic of individuals presenting with ankle fractures in NHS Tayside. We hope these results can be used to inform local decisions made on the allocation of resources and help organise strategies to cope with the increasing local burden[3].

References

1. Scheer RC, Newman JM, Zhou JJ, Oommen AJ, Naziri Q, Shah NV, Pascal SC, Penny GS, McKean JM, Tsai J, Uribe JA. Ankle Fracture Epidemiology in the United States: Patient-Related Trends and Mechanisms of Injury. J Foot Ankle Surg. 2020 May-Jun;59(3):479-483. doi: 10.1053/j.jfas.2019.09.016. PMID: 32354504.
2. ELsøe, Rasmus & Østgaard, Svend & Larsen, Peter. (2016). Population-based epidemiology of 9767 ankle fractures. Foot and Ankle Surgery. 24. 10.1016/j.fas.2016.11.002.
3. Kannus P, Palvanen M, Niemi S, Parkkari J, Järvinen M. Increasing number and incidence of low-trauma ankle fractures in elderly people: Finnish statistics during 1970-2000 and projections for the future. Bone. 2002 Sep;31(3):430-3. doi: 10.1016/s8756-3282(02)00832-3. PMID: 12231418.