A changing pattern of injuries to horse riders

P S Moss, A Wan, M R Whitlock

OBJECTIVE: To describe the demographics and nature of injuries occurring on or around horses, to examine the nature of protective clothing in relation to these injuries, and to compare our data with previously published work in this area.

METHODS: Patients were identified using the term "sports injury–horse riding" from the departmental database for one calendar year from February 2000. Data were collected regarding demographics, injuries, protective clothing, and outcome. The data were then analysed and compared with the previously published literature.

RESULTS: 260 patients' records were analysed. The patients were mostly young (median age 26) and female (84.6%). The majority of patients had a single injury (88.8%). Seventeen per cent had an isolated head injury, all of which proved to be minor. Multiple injuries including the head accounted for 8.5% of all injuries. These again proved minor, bar one fatality where the helmet came off before impact. Upper limb injuries accounted for 29.2% of all injuries of which 61.8% sustained a fracture of which 36.2% were to the wrist. When compared with previous work the incidence and severity of head injury continues to decline while the relative number and severity of upper limb injuries increases.

CONCLUSIONS: The majority of head injured riders are wearing approved helmets and sustaining only minor injury. There is currently no protective gear recommended for the upper limb and more specifically the wrist. This paper identifies the potential need for research and development of such protection.
anonymised. Ethical approval was granted by the Royal Surrey County Hospital Trust Ethics Committee.

It should be recognised that this is a retrospective study, but the relative large numbers and the manner in which the information was collected suggest that the data are accurate.

RESULTS

The total number of new attenders in the A&E department during the study period was 46,517. There were 2,653 (5%) with a sport related injury and of these 276 (10.4%) had a riding related injury. This represents a risk of 5.9 patients per 1,000 new attendances. There was one fatality.

It was only possible to analyse 260 records. The majority were women; 220 (84.6%). The majority of patients were aged between 10 and 35 years (66.3%). The median age was 26 with a range of 1 to 65 (see fig 1). There were more injuries in the spring and summer; 75 and 89 respectively.

In 205 patients (78.8%) the mechanism of injury was a fall, the mechanism in the remainder being kicks 29 (11.1%), bites 2 (0.8%), being trodden on 14 (5.4%), and injury while leading the horse 8 (3.1%). Figure 2 shows the anatomical distribution of injuries.

Isolated head injuries constituted 45 (17.3%) of the patients. Thirteen of these (28.9%) had a simple contusion/abrasion, 24 (53.3%) had a cerebral injury, four (8.9%) had a laceration, two (4.4%) sustained a fracture (facial fractures requiring admission), and a further two (4.4%) had multiple injuries to the head. Of those with a cerebral injury, five (20.8%) were admitted. None of these patients required neurosurgical intervention. Helmets were worn by 36 (80%), who all fell from the horse, whereas the nine without helmets were not actually riding when injured.

Twenty nine (11.2%) of patients presented with more than one injury. Of these only three were admitted, one having a thoracic spine fracture (with no neurological sequelae), one having head and facial injuries requiring imaging and observation, and one who sustained a traumatic subdural haematoma as well as pulmonary contusion (this patient was the only fatality in our series). The helmet this rider was wearing came off before impact. A total of four patients were sent to the fracture clinic, two with upper limb and two with lower limb injuries. Twenty two of the 29 patients had sustained a head injury as part of their clinical picture (all 29 were wearing a helmet).

There were only eight (3.1%) patients with isolated neck injuries and one half of these required a radiograph. There were no fractures and no neurological sequelae. All were discharged home from the department.

There were 28 (10.8%) patients with thoracolumbar (including chest) injuries. Twenty four (85.7%) patients suffered contusions, three had fractures, and one had a
CONCLUSION

Horse riding is an extremely popular leisure activity in the United Kingdom, especially in the more rural environment. Equestrian activities can lead to a multitude of injuries ranging from the very minor to the fatal. Our study shows an increase in the number and severity of upper limb injuries relative to head injuries, which continue to decline. We therefore recommend that further research needs to be undertaken looking at the use of protective equipment for the upper limb and especially the wrist.

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Contributors

Dr M R Whitlock is guarantor for the paper. Dr M R Whitlock helped Dr P S Moss with his original proposals. Mr Wan gave assistance in gaining approval from the local ethical committee.

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REFERENCES


DISCUSSION

This study shows that the number of equestrian injuries collected over a one year period is higher than any other hospital over the past 30 years, but if this is taken as numbers per 1000 attendances it compares favourably with Whitlock’s study in 1986. The incidence of admissions has decreased (10.4%) compared with the studies in other hospitals.

In 1984 Lloyd noted that 50% of admissions were from a head injury and at Oxford it had reduced from 66% in 1971 to 26% in 1991. Muwanga found that six riders wearing a helmet had a skull fracture. McGhee found that all the severely injured had a skull fracture despite the wearing of a helmet. In our study isolated head injuries accounted for only 17.3% of all injuries and only 15.6% of these were admitted. One can conclude that as most riders are wearing a helmet conforming to the European Standard (or equivalent), it is reducing the incidence of a skull fracture and the severity of the injury.

The relative incidence of upper limb injuries would appear to be increasing when compared with other studies. Whitlock found that 24.3% of injuries affected the upper limb with 42.3% having sustained a fracture. In our study 29.2% had upper limb injuries of which 61.8% sustained a fracture. Fractured wrists/scaphoids accounted for 22.4% of the upper limb injuries whereas Whitlock found only 10.8% to have a fracture.

Protective equipment to date has concentrated on the head and body but not the upper limb, especially the wrist. In contrast there is a proposed new standard for roller-blading that includes wrist protection. This may prove suitable for horse riders.
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