Review of sports injuries presenting to an accident and emergency department

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SHORT REPORT

The sport and leisure industry is one of the fastest growing sectors of the business market. It has been estimated that each year 1–1.5 million people attend accident and emergency (A&E) departments in Britain,1 and 3.7 million people present to emergency departments in the USA,2 with an injury related to sport and exercise. With these levels of presentation A&E departments can provide valuable research into the demographics of sports related injuries.

There are numerous studies regarding the incidence of sports injuries within a community or defined population, however, there is little modern research investigating specifically the nature of sports injuries presenting to an A&E department in Britain.3–6 Other studies have been published from Ireland,7 8 Europe,9–11 Australasia,12 13 Asia,14 and more recently North America.21 5

This observational study aimed to determine the incidence of attendance, types of injuries, nature of the sport involved, and the arrangements for follow up management in patients presenting, with an injury related to sport, to the A&E department of Crosshouse Hospital, Kilmarnock.

METHOD

The study took place prospectively over a period of three months from February to April 1999 and included people 16 years of age or over. Any patient presenting with an injury attributable to participation in organised sport or recreational activity had their details and A&E number noted by the triage nurse on duty. Only new attendances were included. Relevant A&E cards were analysed retrospectively by hand. Demographic trends for each patient were recorded:

RESULTS

Incidence of attendance

During the study period overall attendance, excluding children, was 10 172. Of these, 273 cases (2.7%) were classified as sports injuries. Men attended more frequently than women by a ratio of about 9:1. There were only 30 female cases.

Age

Ages of both male and female patients were classified into decades. In both sexes attendance peaked in the 16–20 age category followed by a steady decline in progressing years (fig 1).

Sport

In total 29 different sports were represented. Football was the most common sport by a substantial margin (table 1).

Types of injuries

Soft tissue injuries (STI) dominated (70%) (fig 2). Injuries to the lower limb accounted for 60% of all injuries. The upper limb, head and neck, and trunk were responsible for 25%, 10%, and 4% respectively (tables 2–4). Ankle sprains were the most common injury (19%).

Follow up

Most patients were discharged with instructions to attend their general practitioner (GP) if complications occurred (67%). Altogether 25% were referred to hospital based outpatient clinics (fracture, A&E soft tissue, hand, ENT, and ophthalmology). Five per cent were referred directly to physiotherapy and 3% admitted to hospital (fracture manipulation or observation after head injury) (fig 3).

DISCUSSION

About 50 000 new patients attend Crosshouse Hospital A&E department a year. Sports injuries accounted for 2.7% of attendances. A&E departments manage patients with acute injuries from sport and this value possibly represents the “tip of the iceberg” of sport related injuries. Limiting the study to three months may introduce a seasonal variation. A year long study would reflect the true representation of overall sports injuries attendance.

The incidence of presentation is lower than other studies where values ranged from 3.6%–8.3%. Difficulties exist when comparing the incidence in these dissimilar studies. In some, children were included.5 8 Study periods varied from one week11 to one year.7 8 11 13 14 There is also the problem of comparing values between countries where different healthcare mechanisms exist. In all studies most injuries occur in the under 30 years’ age group irrespective of country of origin. More men present with injuries than women. In this study the male: female ratio was 9:1. Other studies from abroad have a far greater female attendance.11 15

Football was the most common sport implicated in injuries (65%). There was little difference in the other sports represented. Football had a high representation in all studies.

Abbreviations: STI, soft tissue injury; A&E, accident and emergency; GP, general practitioner
National sporting variations, for example, hurling (Ireland),
ice hockey (Finland), skiing (Norway), and rugby union
(New Zealand) are present. Contact sports will result in a
higher chance of injury. Football, a contact sport, will result
in injury. The high incidence of injury in football reflects the
mass national participation in this sport within this country
from a recreational level to organised leagues.

Injuries to the soft tissues are the commonest diagnosis in
all studies. Injuries to the lower limb and specifically the
ankle are most frequently represented; a fact supported by
this study. With lower limb injuries widespread, aspects of
injury prevention must be considered. Shin guards are often
worn by all level of footballers and injuries to the tibia are
uncommon. However, ankle injuries and knee injuries can
lead to significant long term morbidity. Currently there are
no ankle or knee braces specifically designed to prevent
injury and development in this area is required.

Most patients (67%) received no hospital outpatient follow
up, either discharged directly from the department or referred
to their GP if complications arose. This may suggest that a
significant proportion of injuries were of a minor nature and
could be managed in the first instance at primary care level
with first aid measures at the scene. Despite the direct
availability of the physiotherapy department only 5% of
patients were referred. Not all sports injuries require phy-
siotherapy. However, physiotherapy does perform an integral
role in the rehabilitation of soft tissue injuries.

A significant proportion (25%) of patients was referred to
outpatient clinics, mainly fracture and A&E soft tissue. This
figure is comparable to other studies. This is a comparatively
large group of patients and the benefits of a separate sports
injury clinic to deal with A&E referrals and possibly com-
monity based referrals merits consideration. Conversely, on
the basis of this study, this equates to less than 30 new
patients a month, which would be challenged on the
evidence of cost effectiveness.

This study may have some limitations in that only three
months of data are included and relied upon inclusion of
patients by the triage nurse. Future research involving sports
injuries and the A&E interface require a longer study period
producing a greater sample size and include the time of
presentation after injury, the treatment performed, reviewing
the injuries referred to the GP, and any complications after
injury.
CONCLUSION

Sports injuries present only a minor increase in the workload of an A&E department. This may increase in the future with expansion in leisure time and sporting facilities available to the general public. Patients presenting to an A&E department with a sports injury will typically be male and under the age of 30 years. Football is the most common sport implicated in injury. The lower limb is the most frequently injured area and ankle sprains the most common single injury. Most sports injuries presenting seem to be of a minor nature and could possibly be managed with first aid measures by parents, teachers, and coaches at the scene or by attending primary care.

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