From the clinic

Acute injury incidence in professional county club cricket players (1985–1995)

Tim Leary, John A White

Abstract

***Background*—There is a dearth of evidenced based research into sports injury in professional cricket.**

***Aim*—To investigate the incidence, nature, and site of acute injuries sustained by professional cricketers at one English county club over the period 1985–1995.**

***Methods*—Injuries in a sample of 54 cricketers who had played in the first team for the same county cricket club in any or all seasons between 1985 and 1995 were investigated. Injury was defined as the onset of pain or a disability resulting from either training for or playing cricket, which caused the player to seek medical attention.**

***Results*—An acute injury rate of 57.4 injuries per 1000 days of cricket played was found, with most injuries sustained during April, the month in which the least number of days were played. The lower limb was the region most vulnerable to injury, accounting for 44.9% of all injuries, followed by the upper limb (29.4%), the trunk (20.0%), and the head and neck (5.7%). No significant difference in injury incidence among player positions was found.**

***Conclusion*—There is a need for a system of epidemiological data collection and development of a national cricket injury database to help predict, reduce, and prevent injury at all levels of the game.**

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In recent years there have been a notable number of injuries to key players in the England cricket team, which has arguably prevented the strongest team from being fielded, and it has been proposed that this is not a recent phenomenon.[1] The literature contains little evidence based research on injuries in first class cricket, except for comparisons with other sports[2] or descriptions of cricket injuries over one season.[3] The purpose of this study was to investigate the incidence, nature, and site of acute injuries sustained by professional cricketers at one English county club over the period 1985–1995.

Methods

A sample of 54 cricketers (mean (SEM) age 26.6 (5.7) years) who had played in the first team for the same county cricket club in any or all seasons between 1985 and 1995 were investigated. The number of days of cricket played each year, together with injury records from anonymous case notes, allowed a calculation of injury incidence relative to each player's exposure to cricket, expressed per 1000 days of cricket played.[4 5]

Injury was defined as the onset of pain or a disability resulting from either training for or playing cricket, which caused the player to seek medical attention.[6] Injury records kept over the period 1985–1995 by the same chartered physiotherapist allowed detailed analysis for each player including year (season) in which the injury occurred, age of player, type of injury sustained, site of injury, month in which injury occurred, and whether operative intervention was necessary.

Injury incidence was analysed by the χ^2 test applied to the proportions in each category of each variable, and significance was set at the $p<0.05$ level.

Results

INCIDENCE OF INJURY

A total of 990 injuries were recorded over the period of study, with an injury exposure of 17 247 days played and an injury incidence rate of 57.4 injuries per 1000 days played. The greatest incidence of injury occurred in 1985 (76.9, 95% confidence interval (CI) 63.1 to 90.6), and the lowest in 1990 (30.3, 95% CI 17.9 to 42.6) ($\chi^2 = 31.9$, $p<0.05$).

SEASONAL DISTRIBUTION OF INJURY

The highest number of monthly injuries (mean (SEM)) consistently occurred in April (27.3 (3.1)) and May (19.9 (1.3)) every season and declined progressively during June (14.4 (1.3)), July (12.4 (1.3)), August (11.7 (1.9)), and September (4.4 (1.1)). Furthermore the least amount of cricket (percentage of total days played) also occurred in April (6.3%) compared with May (21.1%), June (18.9%), July (17.9%), August (24.2%), and September (11.6%).

TYPE OF INJURY

In any given month, the total group of cricketers sustained cumulatively more injuries in-

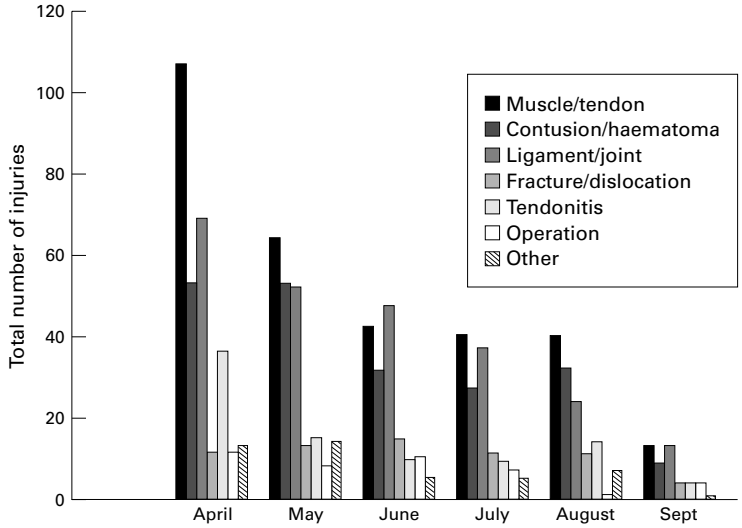

Figure 1 Number (accumulated total per month 1985–1995) and types of injury incurred each month by professional county cricketers during the 1985–1995 playing seasons. "Other" types of injury include ex ostosis, anterior knee pains, lacerations, concussion, and medial tibial stress syndromes.

volving muscle/tendon strains, contusions/haematomas, and ligament/joint sprains than any other types of injury. These injuries were predominant in April and May (fig 1), remained stable during June, July, and August, but declined towards the end of the season in September. Injuries involving fracture/dislocation, tendonitis, operation, or "other" remained relatively stable throughout the early to mid seasons, but also showed some decline at the end of the season.

SITE OF INJURY

Almost half of all injuries (49.3%, 488/990) incurred were to the thigh/calf, the fingers, and the lumbar spine. Most injuries occurred to the lower limb (44.9%), followed by the upper limb (29.4%), and trunk (20.0%), with the head and neck being the least injured (5.7%).

TYPE AND SITE OF INJURY

Within the above three major sites of injury, 72.1% of thigh and calf injuries consisted of muscle/tendon strains and tears, which constituted 57.5% of all muscle/tendon strain and tear injuries. Finger injuries consisted predominantly of contusions which accounted for 40% of all finger injuries together with fractures/dislocations (28.9%) and ligament/joint sprains (23%). Most lumbar spine injuries involved ligaments and joints (63.3%). Knee injuries were principally ligament and joint sprains (27.6%), tendonitis (26.5%), and contusions (16.3%). Foot and ankle injuries were contusions/haematomas (40.7%) and ligament/joint sprains (29.1%). Tendonitis was the main shoulder injury, involving 45.7% of all injuries to this joint.

INJURY EXPOSURE AND PLAYING POSITION

There were no significant differences in the incidence of site specific and total injury among the five player positions (medium to fast bowler, spin bowler, batsman, all-rounder, wicket keeper) per 1000 days played ($\chi^2 = 7.5$, $p = 0.11$). However, the incidence of injury in all bowlers was greater than for any other player position (70.1 injuries, 95% CI 64.4 to 77.4), followed by all-rounders (55.0 injuries, 95% CI 46.7 to 63.3), batsmen (49.4 injuries, 95% CI 44.4 to 54.7), and wicket keepers (47.3 injuries, 95% CI 37.3 to 58.5).

TYPE OF INJURY AND PLAYER POSITION

Muscle/tendon complex injuries occurred most commonly in medium to fast bowlers (32.1 injuries, 95% CI 26.7 to 37.5) and spin bowlers (28.3 injuries, 95% CI 20.1 to 35.9), while all-rounders sustained 26.6 injuries (95% CI 20.8 to 32.5), and batsmen and wicket keepers sustained fewer such injuries per 1000 days played.

Discussion

The acute injury rate of 57.4 injuries per 1000 days of cricket played, with most injuries sustained during April, in which the least number of days were played, corresponds to a disproportionate number of injuries at the beginning of the season as reported previously.[3 7]

The lower limb was the region most vulnerable to injury, accounting for 44.9% of all injuries, followed by the upper limb (29.4%), the trunk (20.0%), and the head and neck (5.7%), which is similar to other work reporting injury distributions.[3] The fingers were the second most commonly injured site (13.6%) and a major site identified previously.[2 3 8]

The vulnerability to injury was highlighted in three specific sites, thigh and calf (24.6%), fingers (13.6%), and lumbar spine (11.0%), which collectively accounted for almost half of all injuries incurred (49.2%). A further three sites, the knee (9.9%), the foot/ankle (8.7%), and the shoulder (7.1%) were also liable to injury and together accounted for a further 25.7% of total injuries. Collectively, these six sites were associated with 74.9% of all injuries recorded.

Although no significant difference in injury incidence among player positions was found, bowlers accrued more injuries, which was also suggested in previous work,[3] and 30.8% of all medium/fast bowlers sustained a spondylolysis of the lumbar spine during the present study.

CONCLUSION

The documented acute injury incidence among first class cricketers could provide the basis for a system of data collection to allow further study of injuries in professional cricket. The development of a national cricket injury database should be adopted using similar epidemiological approaches[5 9] to help predict, reduce, and prevent injuries in cricket.

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Take home message

There is a dearth of evidenced based research in sports injury in professional cricket. England is in a prime position for the study of cricket injury because of the wealth of top class professional players and clubs. There is a need for a system of epidemiological data collection and development of a national cricket injury database to help predict, reduce, and prevent injury at all levels of the game.