Injuries to polo riders: a prospective evaluation

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Abstract

Objective—To assess prospectively the incidence, nature, and severity of injuries to polo riders competing in the 1996 Argentine High Polo season.

Methods—Assessment, documentation, and provision of care for all injuries sustained during the 1996 season by one of the authors. Riders were also surveyed retrospectively for their previous polo injuries.

Results—34 riders took part in the study. Nine injuries were sustained prospectively and 55 injuries were reviewed retrospectively (64 total). The injuries were categorised as minor (10), moderate (13), and major (41). Twenty five (39%) injuries occurred in the arms, 20 (31%) in the legs, 12 (19%) in the head, 3 (5%) in the back, and 4 (6%) in the face. A fracture occurred in 25 (39%) injuries as most resulted from a fall from the horse. Additionally, facial lacerations occurred prospectively in five riders but did not result in missed play. An overall injury rate of 7.8/1000 player-game hours was calculated.

Conclusions—Although many sports have injury rates much greater than 8/1000 player-game hours, the severity of most injuries occurring in polo was classified as major, with fractures and facial lacerations common. The use of a helmet with a face protector is recommended to decrease injury to players. A doctor experienced in the management of serious trauma should be present at all polo matches.

Keywords: polo; horse riders; injury

Polo is one of the world’s oldest equestrian sports and appeared in the Orient well over 2000 years ago. The modern game consists of two teams composed of four mounted riders whose objective is to strike an 8 cm wooden ball with a long handled mallet. Each team attempts to pass the ball between two posts positioned at the ends of the playing field in order to score a goal. The game is divided into periods called “chukkers” of seven minutes each, and is composed of 6-8 chukkers, with the team scoring the most goals being the winner. Substitutions of riders are permitted only in the event of injury.1,2

Injury for this study was defined as any medical episode occurring during practice or match play which caused the rider to miss the following game or practice. Injuries were considered to be either traumatic or due to overuse and were classified as minor (absence from practice <7 days), moderate (absence from practice 7–30 days), or major (absence from practice >30 days). Conditions that did not result in time lost from competition (for example, contusions, simple sprains, or strains) were not considered as injuries. Facial lacerations, which are common in polo and might not cause a rider to miss a game, were recorded separately from the other injury figures.

Each participant played in an average of seven competition games and 30 practice games over the 10 week study, with actual playing time averaging 34.5 hours per rider.

Methods

During the 1996 Argentine High polo season 34 elite players agreed to participate in the study and were followed up prospectively. One of the authors (LAT), a certified orthopaedic surgeon, attended all the games and provided care to the participants. Retrospective information on injuries sustained during the past five years was also obtained from each of the study participants by a questionnaire.

Polo riders are ranked by skill level (handicap) from -2 to 10, with 10 denoting the highest proficiency. Players in this study had an average handicap of 8.5 (range 7–10), with 13 participants ranked at 10. The participants’ average age was 27 (range 21–42) years and all players were male.

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Results

During the prospective study period, nine injuries occurred (table 1)—an incidence of 7.8/1000 players per game hours.

From the retrospective survey, players reported an additional 55 injuries. Only seven players (21%) reported no injuries during the past five years.

All injuries were combined for analysis (prospective and survey), resulting in a total of 64. Most injuries were traumatic (40/64 (62%)) and the rest were considered to be secondary.
due to overuse. According to severity, 10 were minor (16%), 13 moderate (20%), and 41 major (64%) (tables 1 and 2). The most common injury type was fracture (39%), followed by sprain (19%), and concussion (19%) (table 3). The location of injuries was 25 arms (39%), 20 legs (31%), 12 head (19%), 4 face (6%), and 3 back (5%). The most common specific locations for injury were the head (19%), shoulder (17%), and hand-wrist (17%) (table 4). The most common overuse injuries were hip adductor tendinitis and rotator cu

Twelve injuries (19%) required surgery, seven of which were emergencies (five closed fractures, one open foot fracture, and one injury to the eye).

Facial lacerations, which did not cause absence from games, occurred in five participants prospectively and 41 times retrospectively (46 in total). The lacerations occurred in the periorbital region in 22 (48%) cases and about the chin in 15 (33%). Only two players used a face protector in the High Polo season games, one of whom had previously been blinded in one eye owing to a polo injury.

Discussion

Polo is a demanding athletic activity which combines not only the skills of the rider but also the agility and performance of the horse. Significant forces are at play on the field as horses may weight up to 500 kg and gallop at speeds approaching 65 km/h. This energy is transmitted via the rider through the mallet into the ball. Injury can be caused by falls, equipment failures (saddles, stirrups), collisions, or impacts from mallets and balls. A computerised search of English publications failed to produce a previous report on the incidence of injuries in polo competition at any level. Although our study cohort is small and subject to significant variance compared with a larger group, our calculated incidence of injury of 7.8 per 1000 player-game hours represents an initial assessment from which further study may be made. It is interesting to note that compared with other sports, polo has a relatively low incidence of injury per 1000 player hours as ice hockey has 78.4,6 rugby 44.9,7 and soccer 16.9.7 Although the incidence of injury is low, the severity of the injuries was quite high, with most injuries reported to be of major severity (41 (64%)).

In our study injury was most commonly caused by a fall from the horse, which explains the high number of injuries to the arms, and head concussion (fig 1). Our findings are in agreement with other studies reporting horse riding sports injuries.6,14 A computerised search of English publications failed to produce a previous report on the incidence of injuries in polo competition at any level. Although our study cohort is small and subject to significant variance compared with a larger group, our calculated incidence of injury of 7.8 per 1000 player-game hours represents an initial assessment from which further study may be made. It is interesting to note that compared with other sports, polo has a relatively low incidence of injury per 1000 player hours as ice hockey has 78.4,6 rugby 44.9,7 and soccer 16.9.7 Although the incidence of injury is low, the severity of the injuries was quite high, with most injuries reported to be of major severity (41 (64%)).

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The facial lacerations occurring during our study were largely preventable as helmets with face protection devices are available, yet as in
Polo related injuries

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sports could be made.

Taking home message

Polo should be considered a sport with a high risk of serious injury, and medical personnel trained in trauma care should be present at such competitions.

Commentary

The authors should be congratulated on being the first to document polo injuries. The results, however, may not be representative of all who play polo. The study period is small and is limited to professional players, but the anatomical pattern of injury is similar to that of other equestrian activities. Arm injuries are the most common and those to the head the most serious. The classification of injury is different from that of other studies in equestrian and non-equestrian sports, which makes the injury rate per hours played difficult to compare. Perhaps this journal could set criteria which researchers could follow, and thus more accurate comparisons of injury rates in all sports could be made.

Contributors

Matias Costa-Paz initiated and coordinated the formulation of the primary study hypothesis, discussed core ideas, designed the protocol—particularly the documentation of data, participated in data analysis, and writing the paper.

Luis Aponte-Tinao participated in the design and execution of the study—particularly data collection, data documentation, interpretation of the data, and contributed to the paper.

D Luis Muscolo discussed core ideas, interpretation of the findings, and edited the paper.

All three authors take responsibility for the content of the paper.

17 Lloyd RG. Riding and other equestrian injuries: consider-
Helmets are worn in all polo competitions and the Hurlingham Club advises that one is worn to at least the European standard. It is, however, not mandatory. Three European manufacturers make polo helmets to the higher PAS 015 specification, with facial guards as an optional extra. The number of people playing polo is small, but it is becoming more popular. It is now one of the activities organised by the Pony Club. In the past year there was at least one recorded death from a head injury at a Pony Club polo competition. The young look to their peers to set an example with high standards of safety, and this will have a greater effect on reducing injuries than mandatory rules.

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There are arguments that the use of unlimited substitutions will change the nature of the game. This is a difficult argument to sustain as the number of players on the pitch remains unchanged and the skills required for success are the same. The only difference is that neither side will be exposing injured players (valuable assets) to further injury. The physical demands on players in terms of the intensity of competition and numbers of matches has never been greater. It is time to change the rules to allow players to be taken off the field for a full medical assessment and to be allowed to return to play if fit to do so. This will allow the medical team to practise good sports medicine. It will minimise the risk of further injury to an injured player, and it will not deprive a team and their supporters of a player who has a minor injury but was actually fit to continue the match.

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Injury time

The standard of medical care for many team sports has improved enormously over the past 10–15 years. Doctors and physiotherapists have sought out practical and theoretical training in the care of athletes. As a result, many now have diplomas or MScs in sport and exercise medicine.

In our most popular team sports, in particular association and rugby football, there is no facility within the rules of the game for a player to be replaced temporarily to allow these well trained medical staff time to perform an adequate evaluation of an injury. With the exception of a blood injury in rugby, these sports do not allow a replaced player to return to the field of play. This results in a rapid and inadequate assessment under pressure from the referee and coaches. The outcome may be that the over cautious doctor will withhold a player from the rest of the game unnecessarily, and the less cautious doctor may allow an unfit player to return, causing worsening of the injury or putting the player at risk of another injury.

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