

Paediatric injuries during the Australian Junior Motocross Championship treated at a rural centre

Sowmya Prabhakaran, Andrew W Silagy, Nicole A Campbell, Paul V Flanagan, Ian A Campbell

Competitive motocross is a high intensity sport in which riders race on off-road courses that combine natural terrain with man-made obstacles, and may cause significant injury to participants.¹⁻³

Horsham, a Victorian town with a population of about 15 000, hosted the week-long Australian Junior Motocross Championship in October 2017. 340 riders aged 7–16 years competed on the 1700 m circuit, with a maximum of 40 competitors per race, each lasting 10–15 minutes. Races were divided into 13 classes by age and sex; all riders wore mandatory protective armour. A doctor and a paramedic were present to immediately assess injured riders.

Wimmera Base Hospital (WBH) is the referral centre for the region, with resident general surgeons on site and an orthopaedic surgeon available as an outreach service. We conducted a retrospective cohort study of all participants who presented to the WBH with motocross-related injuries during the event. We collected demographic data, and information on the mode of transport to hospital and the injuries treated. The Wimmera Health Care Group certified that the investigation did not require formal ethics approval (reference, CRC 18/1).

Twenty-four patients made a total of 26 presentations to the WBH; one patient presented three times for wound reviews. The average age of patients was 14 years (standard deviation [SD], 3; range, 7–16 years), and 22 (92%) were boys (92% of riders were male). Fifteen patients were delivered by ambulance; 19 received initial medical treatment at the race circuit.

Injuries to the extremities were the most frequent type (Box). Five patients required surgery and three were transferred to paediatric trauma centres. Injuries were sustained at a median speed of 30 km/h (range, 0–45 km/h); jumps (nine patients) and collisions (seven) were the most common mechanisms of injury, while five were incurred during turns, three while riding on straight stretches. There were no deaths.

We publish this report to stimulate discussion about making this sport safer and to explore the public health burden of a championship motocross event held in a rural location. This is the first Australian article describing injuries from an entire motocross event, the most comprehensive for a motocross championship event here or overseas, and the first to describe the management of motocross-related injuries by a rural hospital.

Riders and their parents should be appropriately informed about the risks associated with the sport. Paediatric competitors may have less racing experience than adult riders and undertake riskier racing behaviour. We noted that images of injuries sustained were promoted on social media and celebrated according to the number of “likes” achieved.

During the 2017 Australian Junior Motocross Championship, 7.1% of all competitors presented to the WBH emergency department. To determine the full injury burden, however, prospective on-site research would be necessary, as riders with minor injuries may not present to hospital.

Types and management of injuries of 24 motocross riders presenting to the Wimmera Base Hospital, October 2017

Injury type/site	Number of patients	Immediate operative management	Non-operative outpatient management
Fractures	10	3	7
Mandibular condyle	1	0	1
Proximal humerus	2	0	2
Phalanx (upper extremity)	1	0	1
Distal radius/ulna	2	0	2
Femur	2	2	0
Distal tibia/fibula	2	1	1
Soft tissue injuries	6	0	6
Trapezius tear	1	0	1
Acromioclavicular joint injury	3	0	3
Anterior cruciate ligament injury	1	0	1
Penetrating foot injury	1	0	1
Superficial injuries	8	0	0
Face	2	0	0
Thorax	1	0	0
Abdomen	2	0	0
Upper limb	2	0	0
Lower limb	1	0	0
Shoulder dislocation	1	1	0
Amputation	1	1	0

Given the growth in popularity of motocross, with 22 events in Victoria alone during 2017,⁴ presentations with racing-related injuries are likely to increase. Further research into track regulations, protective equipment and course design may help reduce the trauma burden of this sport. For larger events, local health care services should be informed about race schedules and the expected number of riders so that they can appropriately mobilise their resources.

Competing interests: No relevant disclosures.

Received 16 Nov 2017, accepted 15 Jan 2018. ■

© 2018 AMPCo Pty Ltd. Produced with Elsevier B.V. All rights reserved.

1 Arena CB, Holbert JA, Hennrikus WL. Injuries in the competitive paediatric motocross athlete. *J Child Orthop* 2017; 11: 175-179.

2 Grange JT, Bodnar JA, Corbett SW. Motocross medicine. *Curr Sports Med Rep* 2009; 8: 125-130.

3 Williams BA, McFadden JP, Teurlings TL, Blakemore LC. Pediatric injuries at an annual motocross competition: rates and severity. *J Pediatr Orthop* 2017; 37: e168-e173.

4 Motorcycling Victoria. 2017 Victorian motocross calendar. <http://www.motorcyclingvic.com.au/wp-content/uploads/2016/10/2017-MX-Calendar.pdf> (viewed Jan 2018). ■