

ALPINE SKI AND SNOWBOARDING INJURIES: INCIDENCE, INJURY PATTERNS, AND RISK FACTORS FOR 10 YEARS OF MAJOR TRAUMATIC INJURIES

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BACKGROUND: Alpine skiing and snowboarding are a fundamental part of life in Alberta and Canada. Every year both recreational and professional level participation in these activities results in traumatic injury leading to significant morbidity and mortality. The purpose of this study was to identify the incidence and injury patterns, as well as risk factors associated with ski and snowboarding injuries.

METHODS: A comprehensive 10 year retrospective review of alpine ski and snowboarding injuries from 1996 to 2006 was conducted. The Alberta Trauma Registry was used as the primary source of data and searched using the following terms: Age, sex, date, mechanism of injury, location of incident, on scene and presenting vitals and GCS, type of transport to hospital and routing, ISS, diagnoses, procedures, hospital LOS, ICU LOS, and events surrounding the injury.

RESULTS: One hundred and ninety six patients (56.6% skiers, 43.4% snowboarders, 81.6% Male – mean age 31.5 (\pm 14.9) yrs, 18.4% Female – mean age 27.4 (\pm 12.7) yrs) were identified as having major traumatic injuries (ISS \geq 12) with a mean ISS score of 20.8 (\pm 8.3). Forty-three (21.9%) patients required ICU support. The majority of injuries were related to falls (48.0%) and collisions with natural objects (26.0%). Sixty-nine percent of injuries occurred in the afternoon suggesting fatigue may be a causative factor. Head injuries are most common (52.0%), followed by chest (42.9%), spinal (34.2%), and extremity (33.7%) injuries. Despite the high prevalence of head injuries helmet use is poorly reported (87.0%). Seventy-nine (40.2%) patients required emergency surgery. Orthopedic (15.8%) surgical interventions were most common followed by spinal (12.2%) and abdominal (5.6%) surgery. Of the 11 abdominal surgeries there were six splenic lacerations, three liver lacerations, one diaphragm rupture and one negative laparotomy.

CONCLUSIONS: Skiing and snowboarding represent activities with high potential for traumatic injury. Safety initiatives should be developed and targeted at this population.