

brain injuries sustained amongst Canadians between 1990 and 2014. *Methods:* Data were obtained from the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) database. The study population consisted of individuals who sustained equestrian-related brain injuries between the years 1990 and 2014 and presented to one of 15 participating emergency departments. *Results:* Brain injuries accounted for 13.3% (N=1060) of all equestrian-related injuries. The greatest proportion of injuries occurred amongst individuals aged 15-19 years, followed by individuals aged 0-4 years. The predominant mechanism of injury was falls. 17.9% of individuals were admitted to hospital. Normalized rates of injury increased from 1990 to 2010. *Conclusions:* Brain injuries sustained while participating in equestrian are often of a greater severity than injuries sustained while participating in other recreational activities. A clear understanding of the epidemiology and mechanisms of equestrian-related brain injuries must be achieved in order to effectively implement prevention efforts.

## C.05

### A novel fusiform aneurysmal model in a rabbit carotid: a combination of pericarotid calcium chloride and elastase incubation

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*Background:* The purpose of this study was to develop a novel, simple and effective model of fusiform artery aneurysms in rabbits using a combination of periaortic calcium chloride (CaCl<sub>2</sub>) and elastase incubation. *Methods:* Fusiform aneurysms were developed in three New Zealand White rabbits by exposing a 2 cm segment of the right carotid artery to CaCl<sub>2</sub> (0.5 mol/L) and pancreatic porcine elastase (75 U) for 20 minutes. The left carotid was used as a control. Vessel diameter was measured by serial digital subtraction angiography imaging at weeks 2, 4 and 6. Animals were sacrificed on week 6 and histopathological studies were performed. *Results:* All rabbits developed a fusiform aneurysm, with an average dilation ratio of 105% ± 10% by week 6. No mortality was reported. Histopathological studies revealed pathological features consistent with fusiform aneurysms. *Conclusions:* This novel rabbit model of fusiform carotid aneurysms is the first in the literature by using a combination of periaortic CaCl<sub>2</sub> and elastase incubation. This is a simple, reliable, and effective technique and results in a potentially valuable model for the study of fusiform aneurysms and possible therapeutic interventions, such as flow diversion.

## C.06

### Deficiencies in the reporting quality of RCTs in neurosurgery: How can we do better?

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*Background:* Deficiencies in design and reporting of randomized controlled trials (RCTs) limit their validity. The quality of recent RCTs in neurosurgery was analyzed to assess adequacy of design and reporting. *Methods:* A high-yield search of the MEDLINE and

EMBASE databases (2000-present) was conducted. The CONSORT and Jadad scales were used to assess the quality of design/reporting. A PRECIS-based scale was used to designate studies on the pragmatic-explanatory continuum. Spearman's test was used to assess correlations. Regression analysis was used to assess associations. *Results:* Sixty-one articles were identified. Vascular was the most common sub-specialty (37%). The median CONSORT and Jadad scores were 36 (IQR 27.5-39) and 3 (IQR 2-3). Blinding, sample size calculation and allocation concealment were most deficiently reported. The quality of reporting did not correlate with the study impact. The majority of studies (83%) had pragmatic objectives; while pragmatic studies had compatible design factors, trials with explanatory objectives were less successful. *Conclusions:* The prevalence and quality of neurosurgical RCTs is low. Many study designs are not compatible with stated objectives. Given the role of RCTs as one of the highest levels of evidence, it is critical to improve on their methodology and reporting. Alternative methodologies merit discussion.

## C.07

### Evaluation of the quality of life of patients with high grade subarachnoid hemorrhage following aneurysmal rupture

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*Introduction:* Patients presenting with high grade (HG) subarachnoid hemorrhage (SAH) from aneurysmal rupture may have persisting neurologic deficits which may lead to questioning the decision of treating aggressively. The objective of this study aims at analyzing outcome and long-term quality of life (QOL) of patients with HG SAH treated surgically. *Methods:* Retrospective study of patients with Hunt Hess (HH) grade IV or V SAH treated surgically at our institution. Long-term outcome was evaluated based on the modified Rankin Scale (mRS) at 3 years. Survivors were evaluated for QOL using various scales. *Results:* 63 patients (mean age of 52 year-old) were included. Intraparenchymal hemorrhage (IPH) was found in 85% of cases. 19 patients died. Predictive factors of poor prognosis and mortality were initial cerebral ischemia (p=0.003) and IPH (p=0.007). Favourable outcome (mRS 0-3) was found in 41% of patients. QOL questionnaires revealed that 80 % of responders showed more than 50% recovery. Mild or absent depression was observed in 78% of patients. *Conclusion:* In this surgical series, performed in an endovascular era, nearly all patients presented with SAH-associated IPH at admission. Despite the presence of such negative prognostic factor and the poor condition at admission, a high rate of favourable outcome and QOL was observed, therefore justifying aggressive surgical treatment.