

GR.7**Artificial intelligence-based decision support predicts requirement for neurosurgical intervention in acute traumatic brain injury**

AK Malhotra (Toronto)* C Smith (Toronto) H Shakil (Toronto)
EM Harrington (Toronto) A Ackery (Toronto) AB Nathens
(Toronto) JR Wilson (Toronto) E Colak (Toronto) CD Witiw
(Toronto)

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Background: We aimed to develop an efficient and reliable artificial intelligence solution to automate prediction of neurosurgical intervention using acute traumatic brain injury computed tomography (CT) scans. **Methods:** TBI patients were identified from 2005 - 2022 at a Level 1 Canadian trauma center. Model training, validation, and testing was performed using head CT scans with patient-level labels corresponding to whether the patient received neurosurgical intervention. The finalized model was then deployed in a simulated prospective fashion on all TBI patients presenting to our center over an 18-month epoch. **Results:** 2,806 TBI scans were utilized for development of the Automated Surgical Intervention Support Tool (ASIST-TBI). 612 additional consecutive scans were used for simulated prospective model deployment. Prediction of neurosurgical intervention exhibited an area under receiver operating curve (AUC) of 0.92, accuracy of 0.87, sensitivity of 0.87, and specificity of 0.88 on the test dataset. On simulated prospective data, the results were: AUC 0.89, sensitivity 0.85, specificity 0.84 and accuracy of 0.84. **Conclusions:** We demonstrate the development and validation of ASIST-TBI, a machine learning model that accurately predicts whether TBI patients will need neurosurgical intervention. This model has potential application to optimize decision support and province-wide efficiency of inter-facility TBI triage to tertiary care centers.

ADULT NEUROLOGY (CNS)**A.1****A national eDelphi process to establish Canadian quality indicators for the care of adults hospitalized for neurological problems**

CD Foster (Calgary) M Yaraskavitch (Calgary) E Barrett
(Calgary) S Peters (Calgary) C Bencsik (Calgary) J Burton
(Calgary) KM Chapman (Vancouver) GS Gilmour (Toronto)
D Martino (Calgary) SB Mitchell (Toronto) C Kassardjian
(Toronto) H Khosravani (Toronto) K Sauro (Calgary)
DF Tang-Wai (Toronto) S Wiebe (Calgary) LJ Cooke (Calgary)*

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Background: Our aim was to develop a National Quality Indicators Set for the Care of Adults Hospitalized for

Neurological Problems, to serve as a foundation to build regional or national quality initiatives in Canadian neurology centres. **Methods:** We used a national eDelphi process to develop a suite of quality indicators and a parallel process of surveys and patient focus groups to identify patient priorities. Canadian content and methodology experts were invited to participate. To be included, >70% of participants had to rate items as *critical* and <15% had to rate it as *not important*. Two rounds of surveys and consensus meetings were used identify and rank indicators, followed by national consultation with members of the Canadian Neurological Society. **Results:** 38 neurologists and methodologists and 56 patients/caregivers participated in this project. An initial list of 91 possible quality indicators was narrowed to 40 indicators across multiple categories of neurological conditions. 21 patient priorities were identified. **Conclusions:** This quality indicators suite can be used regionally or nationally to drive improvement initiatives for inpatient neurology care. In addition, we identified multiple opportunities for further research where evidence was lacking or patient and provider priorities did not align.

A.2**Corticosteroid management in neuromuscular disease: a Canadian Survey**

L Stepanian (Kingston) C Bacher (Toronto) RS Laughlin
(Rochester) A Breiner (Ottawa) A Izenberg (Toronto)
V Hodgkinson (Calgary) A Dyck (Calgary) CD Kassardjian
(Toronto)*

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Background: Systemic corticosteroids (CS) are first-line therapy for many neuromuscular diseases. Although long-term use is associated with many adverse effects, guidelines regarding prevention and management of CS-induced (CSI) complications in neurology are lacking, introducing potential practice variation. We aimed to evaluate Canadian neuromuscular neurologist practices for screening and management of CSI complications. **Methods:** A web-based anonymous questionnaire was disseminated to 99 Canadian neuromuscular neurologists addressing the screening, prevention, monitoring and treatment of CSI adverse effects, such as infection and osteoporosis. **Results:** 71% completed the survey. Of those, 52% perform screening blood work prior to initiating CS, 56.3% screen for infections, and 18.3% for osteoporosis. The majority monitor glycemic control and blood pressure. 28.6% never use pneumocystis jiroveci pneumonia prophylaxis, and 28.6% routinely recommend vaccinations prior to CS initiation (most commonly influenza and pneumococcal). 80.0% recommended calcium supplementation to prevent osteoporosis. 36% were unaware of any existing guidelines for preventing CSI complications, and 91% endorsed a need for neurology-specific guidelines. Additional data and details of responses will be presented. **Conclusions:** There is substantial variability in the management of CSI adverse effects among neuromuscular neurologists. This suggests a need for neurology-specific guidelines to help standardize practice.