The Canadian C-Spine Rule more accurately identified cervical-spine injury in trauma than the NEXUS Low-Risk Criteria


QUESTION
In patients with trauma who are alert and stable, how do the Canadian C-Spine Rule (CCR) and National Emergency X-Radiography Utilization Study (NEXUS) Low-Risk Criteria (NLC) compare for identifying acute cervical-spine injury?

DESIGN
Blinded comparison of the CCR and NLC with radiography or the Proxy Outcome Assessment Tool (POAT).

SETTING
Emergency departments (EDs) of 9 tertiary care hospitals in Canada.

PATIENTS
8283 patients ≥ 16 years of age (mean age 38 y, 52% men) with acute trauma to the head or neck who were in stable condition and alert, and had either neck pain or no neck pain but had a visible injury above the clavicles with a dangerous mechanism of injury, a Glasgow Coma Scale score of 15, stable vital signs, and injury in the previous 48 hours. Exclusion criteria included penetrating neck trauma, acute paralysis, vertebral disease, and previous evaluation for the same injury.

DESCRIPTION OF TESTS AND DIAGNOSTIC STANDARD
394 physicians assessed the patients before radiography. The CCR is based on 3 high-risk criteria, 5 low-risk criteria, and the ability of patients to actively rotate their necks. The NLC includes 5 criteria that an eligible patient must meet for cervical-spine injury to be ruled out. The diagnostic standard was radiography or, for patients who did not have radiography, the POAT.

MAIN OUTCOME MEASURES
Sensitivity and specificity of the 2 rules for identifying clinically important cervical-spine injury.

MAIN RESULTS
169 patients (2%) had cervical-spine injuries. In 845 patients (10%), physicians did not evaluate range of motion, which is required by the CCR algorithm; thus, these CCR assessments were indeterminate. Test characteristics for the 2 rules are in the Table (based on the remaining 7438 patients).

CONCLUSION
In patients with trauma who were alert and stable, the Canadian C-Spine Rule more accurately identified cervical-spine injury than the National Emergency X-Radiography Utilization Study Low-Risk Criteria.

References