



AB102. 20. “Is computed tomography of the head always appropriate?”: an evaluation of the outcomes of head computed tomography scans undertaken during a 1-year period in an emergency department

Orlaith Shinnners¹, Christi Brady¹, Rachel O’Keeffe¹, Sean Johnston², Dermot Hehir²

¹Graduate Entry Medical School, University of Limerick, Limerick, Ireland; ²Department of Surgery, Midlands Regional Hospital, Co Offaly, Ireland

Background: Computed tomography (CT) of the head is a common imaging modality in the management of patients with possible intracranial pathology and has significant radiation and cost implications. To evaluate the appropriate use of CT imaging of the head in patients attending the Emergency Department (ED). To identify indicators for predicting clinically significant outcomes in head CT imaging in non-traumatic patients.

Methods: Radiology records of patients undergoing head CT in the ED between November 2016 and October 2017 were interrogated using the Radiological Information System in patients over the age of 18. Patients with

pre-diagnosed intracranial pathology were excluded. Multivariate logistical regression was used to identify the total number of scans that had clinically significant outcomes and to identify predictors of clinically important abnormal CT findings in the non-traumatic patient cohort.

Results: Thirteen fifty-eight scans were identified within the 1-year period. Four hundred thirty-two (31.8%) indicated for trauma and 926 (68.2%) for non-trauma. Common indicators utilised for non-traumatic head CTs were focal neurological deficit (36.7%), headache (32.5%), collapse (17.9%), dizziness/syncope (15.6%), confusion (15.1%), visual disturbance (14.7%), Glasgow Coma Scale (GCS) <15 (13.7%), seizure (10.8%), nausea/vomiting (9.3%) and anticoagulation (3.9%). Of these, 4 indicators were found to be statistically significant and positively correlated with abnormal findings on CT [GCS <15; P=0.001, odds ratio (OR) =3.794, focal neurological deficit; P=0.014, OR =2.117, nausea/vomiting; P=0.002, OR =3.748, anticoagulation; P=0.038, OR =2.807] while 1 indicator was negatively correlated (dizzy/syncope; P=0.010, OR =0.152).

Conclusions: Our findings suggest the potential over usage of CT in patients with possible intracranial pathology. Further prospective evaluation may support the use of detailed appropriate clinical examination as an alternative.

Keywords: Clinical risk factors; computed tomography; emergency department (ED); focal neurological deficit; GCS <15

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