

Silver trauma - a traffic light algorithm to optimize imaging for low-energy trauma in the elderly

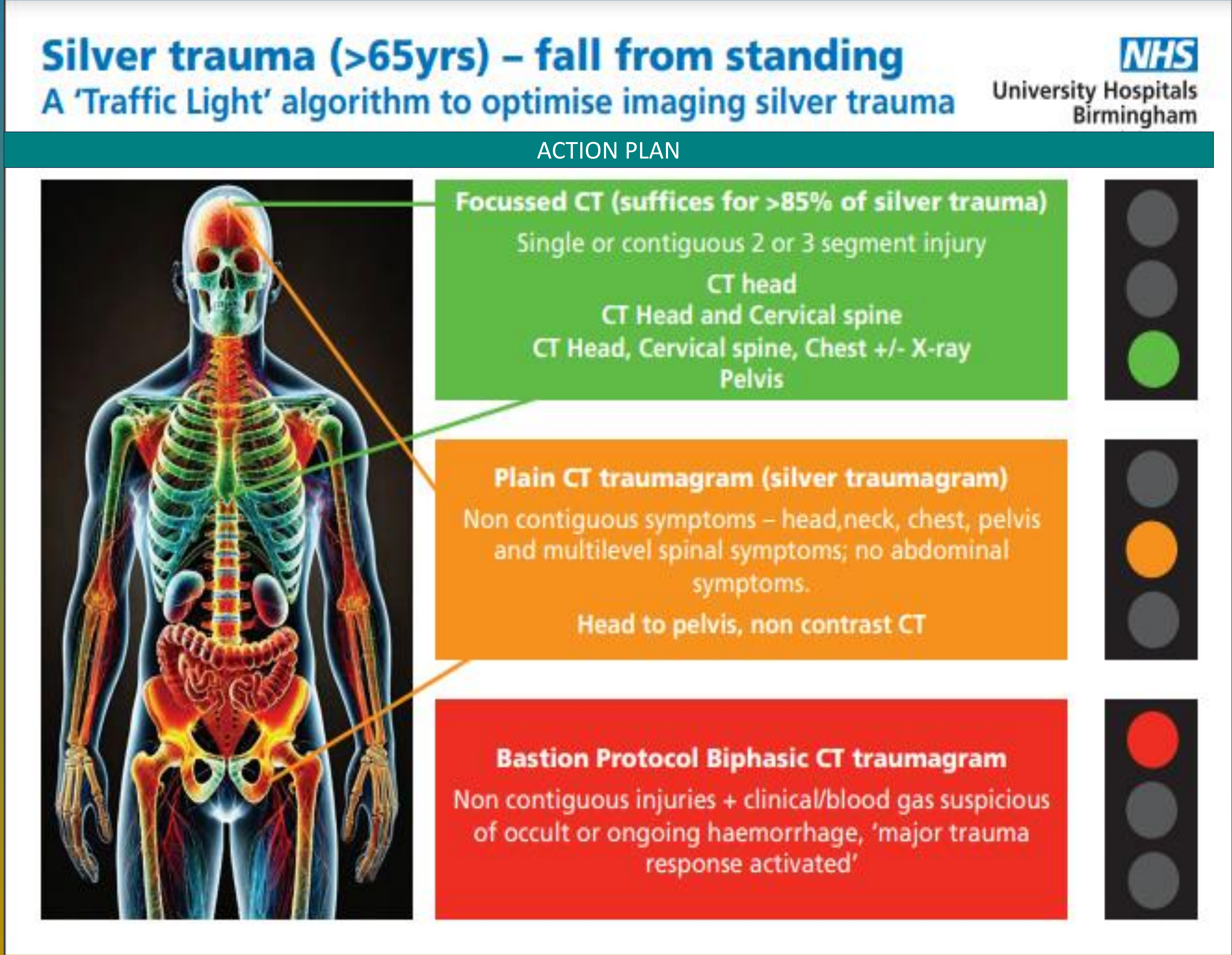
Nimmi Peedika, S Choudhary
Department of Clinical Radiology and Major Trauma Service
Queen Elizabeth Hospital, University Hospitals Birmingham NHS Trust

Background: Existing decision tools for trauma CT have not been validated for older patients with simple fall from standing. In this audit, we assessed if certain clinical variables can predict injuries and be utilized to direct appropriate imaging in this patient group, instead of a default whole-body CT traumagram.

Standard – Major adult trauma radiology guidance, RCR 2024, TARN network guidance 2017

Indicator – Appropriateness of CT based on history and clinical findings.

Method: Data was collected over one year for patients over 65, who had a plain or biphasic whole-body trauma CT (WBCT). Information from electronic health records included age, mechanism of injury, physiological parameters, WBCT findings, and treatment details.



Results of the first audit: 82.2% of cases, injuries were confined to a specific anatomical region, supporting a need to tailor imaging, instead of whole-body scans for all elderly trauma." Clinical findings had a 50% chance of correlating with CT findings.

Head injuries: Most common necessitating CT scans in the elderly – focussed head CT.

Thoracic and spinal injuries, the second most common injury pattern, can be assessed with plain CT scans without physiological derangement.

Appendicular injuries: Can be evaluated with plain radiographs. **Abdominal injuries:** Rare in this sub-group, can be assessed using Advanced Trauma Life Support (ATLS) principles and focussed contrast-enhanced CT scans.

Results of re-audit - Showed continued overuse of contrast-enhanced whole-body CT scans for elderly patients with falls from standing.

Among 171 patients: 50% underwent biphasic contrast-enhanced whole-body CT scans (Bastion protocol). Of these, 25% had normal physiological parameters and clinical examinations, resulting in normal Bastion CT studies.

23.5% had abdominal symptoms; 3.5% showed corroborating injuries on CT, and 0.5% required immediate treatment, with no surgical interventions. Bastion WBCT, detected no life-threatening injuries in the study population. 32% underwent plain CT scans: 9% had negative findings, 1% recalled for contrast imaging.

17% had focused CTs and did not require repeat imaging