

## Letter to the Editor concerning “HIPTCN: Prospective Observational Study of Hypocoagulated Head Trauma Patients with Normal Admission Computed Tomography Scan”

### Carta ao Editor referente a “HIPTCN: Estudo Prospetivo Observacional de Doentes Traumatizados Cranioencefálicos Hipocoagulados com Tomografia Computorizada Inicial Normal”

**Keywords:** Anticoagulants; Brain Injuries, Traumatic; Intracranial Hemorrhage, Traumatic; Neurosurgical Procedures; Tomography, X-Ray Computed

**Palavras-chave:** Anticoagulantes; Hemorragia Intracraniana Traumática; Lesões Encefálicas Traumáticas; Procedimentos Neurocirúrgicos; Tomografia Computorizada

Dear Editor,

Duarte-Batista *et al* have analyzed the occurrences and outcomes of a series of 178 adult patients with head injury that had an initial normal head computed tomography (CT) scan, and despite that, further remained in hospital for a 24-hour surveillance period due to a hypocoagulative state (drug induced and/or caused by coagulopathy), then undergoing a post surveillance CT scan. As a rule, anticoagulation medication was not taken during the surveillance period, they state, but the cases in which either partial or total reversal was performed were not reported. With this approach, the authors found that the mortality rate of patients was zero.<sup>1</sup> They diagnosed all the patients that developed delayed intracranial hemorrhage ( $n = 4$ , 2.3%), and curiously they were all asymptomatic; one had already undergone reversal of anticoagulation and the remaining were kept off the medication. None of these patients with delayed intracranial hemorrhage required surgery, and no morbidity was recorded. They also state that their results cannot support exclusion of post surveillance CT scan since it dictated the management of anticoagulant therapy. They also recall the possibility of a falsely normal initial head CT scan that has been described in the literature in this setting due to errors in radiology reporting.

Nevertheless, they assume seven occurrences that they encountered during the 24 hour in-hospital surveillance period as complications caused by this in-hospital requirement, and in view of this 3.9% rate, they hypothesize on home surveillance and ambulatory post surveillance CT scan. They report five situations of mental changes (agitation, confusion) as maladaptation of the patient to the hospital environment, but a differential diagnosis with brain concussion symptoms does not seem to have been made. A case of stridor due to nasogastric intubation attempt was described, but the indication for the procedure was apparently judged as correct; in a home setting this could lead to more serious consequences. The case of atrial fibrillation with tachycardia due to withdrawal of beta blockers regarding which the medical team was unaware of could happen in the home setting as well, especially when dealing with a

population with a mean age of 80.7 years as reported by the authors. The proposal of home surveillance and proper information for patients and caregivers regarding red flags in selected situations does not provide clues as to how effectively can the healthcare team in an emergency room setting ascertain the real aptitude of both patients and caregivers to perform these tasks. The patients might be subjected to transportation constraints in the setting of acute trauma, and the organization of prehospital emergency care can feel like an extra burden if the patients deteriorate at home and have to be transported back to the hospital, either for due and undue reasons. The authors also do not elaborate on the importance and merit of diagnosing a worsening Glasgow coma scale score in four patients (2.2%) and new neurological deficits in two (1.1%) during the in-hospital surveillance period, and on the possible consequences of this occurring in a home setting.

A seminal paper on this subject<sup>2</sup> reports on four patients who had normal neurological examinations and normal computed tomographic scans after mild head injury, and who later developed an acute subdural hematoma and deteriorated rapidly. One deteriorated 12 hours after the trauma, two on the day after, and the other on day three. Three of the four patients underwent craniotomy for evacuation of their hematomas. Two patients died and two reached Glasgow outcome scores of three and four only after extended inpatient rehabilitation. None of these patients underwent reversal / correction of the coagulation abnormalities, one was discharged right after trauma, another six hours after, and the remaining two were inpatients. The repeat CT scan was performed due to the neurological deterioration. This serves to illustrate that such favorable outcomes as reported by Duarte-Batista *et al* are not necessarily the rule for these patients; that consideration should be given to a full evaluation of the coagulation status of these patients; that suspension of these medicines and even early reversal in situations of largely abnormal laboratory results should be considered; and that a repeat CT scan within a six to 24 hour time frame could allow for the timely diagnosis of delayed intracranial traumatic hemorrhage in hypocoagulated patients.

Duarte-Batista *et al* are to be commended since they have succeeded in the Herculean task of performing a multicenter study on hypocoagulated head trauma patients with normal admission CT scan, and demonstrating that very low morbidity and mortality rates can be achieved in the management of these patients with the protocol that they use. Changes to that protocol can certainly be hypothesized, but further variables should be brought into the discussion.

#### COMPETING INTERESTS

The author states there are no competing interests.

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## REFERENCES

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Lino MASCARENHAS✉<sup>1</sup>

1. Serviço de Neurocirurgia. Centro Hospitalar de Vila Nova de Gaia/Espinho. Vila Nova de Gaia. Portugal.

Autor correspondente: Lino Mascarenhas. [linomasc@gmail.com](mailto:linomasc@gmail.com)

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