

Severely Injured Patients Benefit From Spinal Surgery Within the First 72 Hours, Regardless of their Pre-Operative Neurological Status

Arnaldo Sousa, MD¹ and Ricardo Rodrigues-Pinto, MD, PhD, FEBOT^{1,2}

We appreciate your interest and commentaries to our manuscript.¹ In our study “hours after admission” were considered rather than “hours after injury”. We have made this decision because the precise injury time was not always available and, due to the retrospective nature of the study, could not be accurately retrieved. Nonetheless, data from the Portuguese National Institute of Medical Emergency (Instituto Nacional de Emergência Médica – INEM) shows that average response time from emergency activation to the arrival at the site is “less than 30 minutes” in urban and even rural areas.² As such, we find it acceptable to assume that, in this cohort of patients “delay to surgery” and “time to surgery” can be used interchangeably. This is even more relevant since in the “early surgery” group the median delay to surgery was 9 hours, whereas in “late surgery” group the median delay to surgery was 14 days (range 78 to 672 hours, average 338 hours), making this 30-minute difference even less relevant.

Regarding your reference to the paper by Du et al, we would like to emphasize that Du and colleagues analyzed of cohort of patients with spinal cord injury (SCI) (ASIA Impairment Scale grade A-D) and for those patients, there is currently robust evidence supporting early (<24 hours surgery) with the first 24-36 hours representing a “crucial time window to achieve optimal neurological recovery with decompressive surgery following acute SCI”.³ Our study, however, is not a study on timing in SCI patient. It addresses a different question: how soon should severely injured patients undergo surgery (stabilization with or without decompression), regardless of their pre-operative neurological status. It was not our intent to analyze timing to surgical decompression in patients with SCI nor neurologic recovery, as this subject has been extensively analyzed and there is currently very little controversy regarding it.

In conclusion, spinal stabilization in the first 72 hours in severely injured patients (requiring organ support therapies and direct admission to an intensive care unit (ICU)) shortens intubation time, ICU and overall length of stay, with no differences in terms of mortality rate. The benefit of early surgery in SCI

patients is related improved sensorimotor recovery and, in these cases, evidence is that, if possible, they should be submitted to surgery even earlier (< 24 hours).

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

1. Sousa A, Rodrigues C, Barros L, et al. Early versus late spine surgery in severely injured patients-which is the appropriate timing for surgery? *Global Spine J.* 2021;2192568221989292. doi:10.1177/2192568221989292
2. Relatórios anuais de atividades do Instituto Nacional de Emergência Médica (INEM) [Annual activity reports of the National Institute of Medical Emergency (INEM)]. Updated October 16, 2020. Accessed February 22, 2021. <https://www.inem.pt/category/transparencia/instrumentos-de-gestao/>.
3. Badhiwala JH, Wilson JR, Witiw CD, et al. The influence of timing of surgical decompression for acute spinal cord injury: a pooled analysis of individual patient data. *Lancet Neurol.* 2021;20(2):117-126. doi: 10.1016/S1474-4422(20)30406-3

¹ Department of Orthopaedics, Spinal Unit/Unidade Vertebro-Medular (UVM), Centro Hospitalar Universitário do Porto, Portugal

² Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Portugal

Corresponding Author:

Ricardo Rodrigues-Pinto, Head of Spinal Unit/Unidade Vertebro-Medular (UVM), Department of Orthopaedics, Centro Hospitalar Universitário do Porto, Largo Prof. Abel Salazar 4099, Porto, Portugal.
Email: ric_pinto@hotmail.com

