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COMMENTARY

Commentrary on article 70_15, Mauro Dobran, Maurizio Iacoangeli, Niccolò Nocchi, Alessandro Di Rienzo, Lucia Giovanna Maria di Somma, Davide Nasi, et al., Asian J Neurosurg 2015 (3);207-211.

Evidence-based evaluation of early versus late surgical decompression in cervical spinal cord injury

One hundred and ten years ago, Burrell reported that the timing of surgery is a main issue in the management of traumatic spinal cord injury (tSCI).[1] Nowadays, despite numerous studies, proper timing is yet an unresolved substantial argument. So far we don't know whether the lack of improvement in neurological deficits following tSCI is due to early damage to the spinal cord or its continuing compression. The laboratory evidence and experimental data supports the hypothesis that early decompressive surgery after tSCI decreases secondary injury mechanisms such as inflammation, vascular changes, electrolytes shifts, excitotoxic neurotransmitters accumulation, and loss of energy metabolism.[2] Theoretically, early decompressive surgery reduces the swelling and enhances blood flow to the injured zone, and this may improve neurological outcomes, reduce length of hospitalization, decrease complications, and attenuate the time to rehabilitation and mobilization as compared to delayed surgery.[3] However, the clinical evidence has failed to provide strong support for this theory.[4,5] Why? At first, the poor cooperation of the patient and analgesia makes early neurological assessment very difficult, imprecise, and commonly overestimated. Second, early surgery can lead to worsening of hemodynamic, respiratory, and neurological functions. Of course, some studies emphasized that earlier surgery could promote earlier patient mobilization and subsequently, earlier discharge from the hospital.[6] However, owing to the heterogeneity within and between studies, early surgery lacks robustness.

For all these reasons, the optimal time of surgery after tSCI remains one of the most controversial topics pertaining to the spinal surgery. A study, which is specifically focused on cervical tSCI, can be helpful in terms of importance and homogeneity, and contribute additional data as a valuable approach to care for tSCI.

Mahdi Sharif-Alhoseini, Alexander Vaccaro[1], Vafa Rahimi-Movaghar

Sina Trauma and Surgery Research Center, Tehran University of Medical Sciences, Tehran, Iran, [1]Department of Orthopedic Surgery and Neurological Surgery, Thomas Jefferson University and Rothman Institute, Philadelphia, Pennsylvania, USA

Address for correspondence:
Prof. Vafa Rahimi-Movaghar,
Sina Trauma and Surgery Research Center,
Tehran University of Medical Sciences, Tehran, Iran.
E-mail: v_rahimi@sina.tums.ac.ir

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