



Editorial



Commentary on “Established and Emerging Therapies in Acute Spinal Cord Injury”

Lingbo Kong

Department of spine surgery, Xi'an Honghui Hospital, Xi'an Shaanxi, China

Corresponding Author

Lingbo Kong

 <https://orcid.org/0000-0002-3858-430X>

Department of Spine Surgery, Xi'an
Honghui Hospital, Xi'an Shaanxi, China
Email: lingbokong@163.com

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Spinal cord injury (SCI) is a severe neurological disease commonly caused by traumas or variety diseases which can lead to complete or incomplete neural function deficiency.¹ Among all the directly or indirectly causal external factors resulting in SCI, the trauma, which including traffic accidents, falls and sports/recreation, are the most common etiologies of SCI.² Due to severe incapacitation of the limbs below the injured segment after SCI, SCI not only causes considerable physical suffering and mental distress to patients themselves, but also incurs substantial economic burdens for families and society.³ According to incomplete statistics, SCI affects more than 2 million people worldwide. Therefore, finding ways to repair damage to spinal cord tissue is a common goal in modern medicine. Of course, understanding the molecular and cellular mechanisms contributing to the pathophysiology of SCI is essential for developing more effective therapeutic interventions.

In the current study, Dr. Gadot et al.⁴ have provided thoroughly review of the SCI, which including the mechanisms of SCI injury, SCI patient's clinical presentation, and established acute management strategies. All these subsections have focused the classical view about the mainly pathological changes during the SCI process, and novel understanding for SCI, as well as ongoing studies carried by worldwide.

In general, the pathophysiological types of SCI are characterized as acute, secondary and chronic phases.⁵ Primary damage to the spinal cord occurs as a direct result of the initial trauma, such as compression, shearing, laceration, transection, stretch, or distraction, leading to immediate hemorrhage or vasospasm and rapid cell death.⁶ Concomitantly, Secondary injury closely follows in an ongoing way characterized by further damage to neuronal and glial cells and is accompanied by paralysis, intense pain, and progressive neurological damage.⁷ This phase usually occurs within minutes after injury and can last for weeks even months. The concomitant and consecutive pathological events in this phase involve the immune response, inflammation, apoptotic cell death, and formation of cystic cavitations and astroglial scars.⁸ Authors have provided novel reviews on these aspect in the section of “experimental acute management strategies” which containing 5 subsections for discussed and explored the details in each cited literatures in the categories of current novel understandings of SCI pathophysiology.

Conflict of Interest: The author has nothing to disclose.



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