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RESEARCH ARTICLE

Traumatic Brain Injury: Mechanistic Insight on Pathophysiological Mechanisms Underlying, Neurotransmitters, and Potential Therapeutic Targets

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Abstract

More than seven million Americans have suffered a stroke, and at an economic burden of billions annually. Among these cases, ischemic stroke is the only leading cause that accounts for more than 80% of cases of stroke patients.Following the World Health Organization (WHO), nearly five million people lost their lives per year from traumatic injuries worldwide. (1) Moreover, brain ischemia is also underlined as a key cause of death and adult brain disability. Enormous progress has been made in drug discovery, even though a lot of uncertainty persisted in the methodology adopted in treating traumatic brain injury (TBI) and diseases. (2) In severe conditions, these injuries are untreatable and considered fatal diseases. The mechanisms of the physiology of TBI are a series of complex phenomena with great uncertainty involving alterations in cerebral perfusion, triggering of inflammatory cytokines, and excitotoxicity. (3) In some head injuries i.e., concussions, contusions, brain hemorrhages, intracranial hematomas, coup-countercoup brain injury, diffuse axonal injury, penetrating brain injury, if it is not quickly and successfully treated, such states defined as cellulitis, and initiates the spread of speedy infection. (4) As the infection inflates, it may blow out through the blood in the patient body, at these moments, the patient fell unwell, simultaneously, temperature elevates and the infections achieve a fatal phase and later on, transpired into severe infection ailment, known as sepsis. which may cause such infections in the aforementioned injuries. (5) Among these cases, ischemic stroke is the only leading cause that accounts for more than 80% of cases of stroke patients.

Opinion

The author's goal is to illustrate the underlying neurochemical, synaptic transmission, chemical pathways, and metabolic responses and the complications that occurred during TBI. To prepare a blueprint for the treatment that can be applied for dealing with these complex situations, the elaboration of the offers is required and the same can be underlined for searching for potential targets for innovating therapy for the future. (6)

That is why further interpretation and scientific elucidation are necessary to discover the recognition of features involved in it. These strategies can emerge as a small tool for the discovery of potential

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Supplementary information The online version of this article (XXXXXXXX) contains supplementary material, which is available to authorized users.

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