Farhana Akter, Brain Disord Ther 2016, 5:3(Suppl)
http://dx.doi.org/10.4172/2168-975X.C1.011

Tissue engineering of the central nervous system: Spinal cord injury

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Spinal cord injury (SCI) defects are complicated and there is currently no solution to completely repair spinal cord injuries. Neural tissue engineering offers hope to patients and is becoming a rapidly growing field, which aims to create engineered tissue that can replace and repair damaged tissue. Injury to the spinal cord can result in a permanent disability and is thus of significant psychological, social and economic morbidity to the patient and their relatives. As part of the endogenous repair process following acute injury, there is a migration of cells such as astrocytes, microglia and schwann cells. However, the spinal cord has limited endogenous regenerative capacity. Current treatment strategies including drug delivery and cell delivery have been investigated; however have been met with variable success. Tissue engineering is an emerging area in biomaterial research that possesses great therapeutic potential. We will be discussing the current use of scaffolds, cells and growth factors used in tissue engineering of the spinal cord.

Biography

Akter is a surgical resident and doctoral student at The Stem Cell Institute, University Of Cambridge. His research interests include studying the pathophysiology and treatment of cervical myelopathy and spinal cord injury.

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