Spinal Cord Injury Management

<u>Overview and Pathophysiology</u>

During an injury, the spinal column and the spinal cord can be injured anywhere along their length. Most of the damage occurs at the time of injury but further damage can be caused by improper handling of the unstable spine and by the disruption of blood supply, which can cause hypoxia and necrosis. Spinal shock occurs immediately following SCI and results in a complete loss of motor, sensory, reflex, and autonomic function below the level of the injury. This loss is manifested in flaccid paralysis, loss of reflex activity below the level of spinal cord injury, hypo-tension, bradycardia, and sometimes paralytic ileus. It can last several days to several months.

Spinal shock recovery can be accompanied by complications such as autonomic dysreflexia, bladder, and autonomic dysfunctions. Patients with injuries at T6 or above are likely to have autonomic dysreflexia.

The initial goals of SCI are to determine the extent of the injury, immobilize to prevent other injury, stabilize and treat other life threatening injuries. After initial stabilization, the goals may include decompression of the spinal cord or spinal nerves with traction or surgery, realignment of the spinal column with traction or surgery for optimal function.

Below are the specific signs, symptoms, and functional outcomes for complete lesions at each level of injury.

C1 –C4 Injuries

➢ Loss of all motor and sensory function form the neck down
➢ Retention of reflexes in the biceps
➢ Loss of involuntary and voluntary respiratory function
➢ Loss of bowel and bladder control
➢ Requires a ventilator, a tracheostomy, electric wheelchair with head support, home adaptations, and home care upon discharge

C5 Injuries

➢ Loss of all motor function below the upper shoulders
➢ Loss of voluntary respiratory function, bowel and bladder control
➢ Can achieve some control of upper limbs and use some adaptive devices with head controls
➢ Requires an electric wheelchair with hand controls, dependent transfers, and home adaptations