The most common site of injury to the spinal column is at the thoracolumbar region, of which more than 50% occur at T11 to L1 levels. More than half of such injuries are sustained in vehicle accidents and 25% are secondary to a fall from a height (usually exceeding 3 meters). Complete neurological deficit has been reported in 25% of such patients and incomplete deficit in about 15%.1

Considerable anatomic differences exist throughout the spinal column. The thoracic spine is kyphotic and has relatively greater intrinsic stability and a relatively narrower spinal canal. Axial rotation is greater in the thoracic spine because of coronal alignment of the facet joints. The lumbar spine is lordotic and enables greater degrees of flexion and extension owing to sagittal alignment of the facet joints. A transient junction of thoracolumbar spine, where the facets of lower thoracic vertebrae gradually change to less coronal and less sagittal alignment (from a rather stiff thoracic segment to a rather mobile lumbar segment), is more likely to sustain fracture-dislocations.

There are different ways to classify fracture-dislocation of thoracolumbar segment, based on the types of mechanical loading to the spine during injury. The most common primary forces are axial compression, lateral compression, flexion, extension, distraction, shear, and rotation. The most common combined forces are flexion-rotation and flexion-distructraction; both of which may lead to neurological compromise.

Initial evaluation and management are essential, particularly at the scene of accident and during transportation to hospital. Complete systemic assessment, namely airway, breathing, circulation, abdominal viscera, associated musculoskeletal injuries, and more importantly the neurological status of the lower limbs should be performed thoroughly.2 Neurological injuries have a profound effect on functions. The presence or absence of neurologic deficits guides subsequent management. In a patient with a neurological deficit, close monitoring of neurological function is critical. Testing of the perineal region for perianal sensation, bulbocavernosus reflex and anal wink to indicate sacral sparing is an indicator for functional recovery.3

Recourse to pharmacological agents to manage spinal cord injury is controversial. Some studies have reported that megadoses of steroid given within 8 hours of injury may improve long-term neurologic function.4 However, this entails potential complications such as pneumonia, postoperative wound infection, gastrointestinal haemorrhage, and sepsis.

The goals of treatment for spinal injuries are to maintain and restore spinal alignment and stability, and preserve neurological function. In the article by Sharma et al.,5 single screw-rod anterior instrumentation supplemented with orthosis bracing was used as an alternative to double screw-rod anterior instrumentation in patients with smaller vertebral bodies so as to minimise the risk of iatrogenic damage to the great vessels.

REFERENCES