# INTRODUCTION

There are as many as 60000 spinal column injuries annually in the united states. The thoracolumbar junction appears to be the second most commonly involved region preceded only by mid to lower cervical injuries. It was found that males in the middle age were subjected to thoracolumbar fractures than females.

Motor vehicle accident, falling from a height & falling of a heavy object on the back; are the most common causes of fractures. The specific deformity produced depends on the amount & direction of force applied to the spine. Axial loading with flexion produces an anterior wedge compression injury. True vertical axial compression transmits the force directly to the vertebral bodies causing a burst fracture. Distraction applied in flexion resulting in splitting injury (chance fracture).

The biomechanics of the spine as a whole & the thoracolumbar junction as a zone of structural & functional transition, which makes it vulnerable to injury, are the key points in understanding the resulting fractures that follow various loads applied to the spine. Factors affecting the stability of the spine are also of great importance.

Denis described the spine as a three – column-supporting structure 1) anterior column: anterior longitudinal ligament, anterior annulus fibrosus & anterior half of the vertebral body. 2) middle column: posterior longitudinal ligament, posterior annulus & posterior half of vertebral body. 3) posterior column: pedicels, facet joints, lamina, spinous processes, interspinous & supraspinous ligament.

Careful history taking with special care to the mode of trauma & the time passed form the onset of the trauma to the initial management, accompanied by proper neurological examination including the rectal tone & post voiding residual measurement, all these are crucial in determining the subsequent management.

The thoracolumbar region includes elements of the spinal cord, the conus medullaris & the roots of the cauda equina. Injury to this region may therefore produce a confusing clinical picture of upper & lower motor neuron defects.

Various radiological investigations should be done to any patient suspected of thoracolumbar trauma including plain X-ray lateral view to visualize wedge fracture or loss of vertebral height with anterior & posterior bone propulsion in a burst fracture. Antroposterior views may show an increased interpedicular distance. Oblique views show fracture pars. Dynamic views show the instability. C.T scanning is important to determine neural canal compromise MRI on thoracolumbar region may be needed also to assess soft tissue (neural tissue) injury.

The most important concern with any spinal fracture is the potential for injury to neural element. Immediate stability of the case must be considered. The general aim of the treatment is the improvement & preservation of neurological function as well as the prevention of progressive deformity & pain. This may require aggressive operative intervention in some cases (Surgical management), but only external immobilization in others (Conservative treatment). Determination of the type of treatment depends on various elements including the neurological state of the patient (e.g progressive deteriorating neurological deficit), the number of column affected & their stability. Many surgical approaches

whether anterior or posterior are indicated for fixation of unstable or potentially unstable fractures.

Complications of thoracolumbar fracture include immediate affection of the neuronal tissue or delayed effects as kyphosis & complications of surgery.