

Current Scenario in Osteoporotic Vertebral Fracture

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Bone fragility increases with osteoporosis resulting in increased risk of fractures. It is a major concern for postmenopausal women also in elderly. In USA and Europe, postmenopausal women who have osteoporosis are about 30%. Above age 50, one in three women or one in five men is expected to experience osteoporotic fracture.^[1] A minor trauma like a fall or spontaneous may be due to osteoporotic vertebral fractures (OVF) which is expected to affect 117/100000 persons.^[2]

In India, approximately 250 million people are above age 50. Of these, 20% are women with osteoporosis.^[1,3] Thoracolumbar is of vertebrae that are the second most common area of fracture; however, it is the less reported.^[2] Vertebral fractures only 30–40% are symptomatic and are reported to medical facilities. The incidence was higher in women, 10.7–14.7/1000 person-year than in men 5.7–5.9/1000 person-year).^[3]

Vertebral fractures related to osteoporosis may or may not be related to minor trauma. Blunt trauma leading to thoracolumbar fractures amounts to be 6.9%.^[3]

Conventional treatment for managing OVF includes conservative approach through short-term bed rest, analgesic, anti-osteoporotic drugs, support such as use of braces and exercise. Prolongation of these especially in elderly, however, leads to complications. Prolonged bed rest may cause muscle atrophy, progression of osteoporosis due to immobilization, pressure ulcers, thromboembolism, and use of NSAIDs may lead to adverse events on gastrointestinal system and kidneys and use of opioids cause nausea, drowsiness, or even tolerance development.^[4,5]

Quality of life is greatly affected by OVF as it has high impact on health than other fragility fractures.^[2]

Conventional versus vertebral augmentation such as vertebroplasty and kyphoplasty is still a debate on which treatment is effective even after 4000 articles and 14 clinical trials. About 15–35% patients require surgery if they have severe collapsed vertebra causing kyphosis or neurological deficit or chronic back pain, chronic pseudoarthrosis, or unstable fractures.^[5]

Many studies show that decrease in pain and improvement of local kyphosis after vertebral augmentation (VA) has led to improvement in sagittal imbalance in OVF (compression fractures).^[6]


Other studies show that osteoporotic burst fractures having satisfactory results with VA although the general condition was poor without any neurologic deficit.^[7]

According to American spine intervention societies positioning statements, VA has greater advantage over conservative treatment especially due to the adverse effects of bed rest such as decreased muscle strength, increased pressure sores, deep vein thrombosis, and gastrointestinal and genitourinary complications.^[8]

However, VA also has complications of re-fracture. Factors affecting this could be pre-operative intravertebral cleft and severe kyphosis, thoracolumbar OVF, solid lump cement distribution pattern, and higher vertebral height restoration.^[9]

CONCLUSION

In spite of numerous studies being done showing advantages of VA, there is lack of acceptance of the evidence due to heterogeneity among these trials. Difficulty to translate this to routine clinical practice has also affected the acceptance. Collaborative model approach to use conservative, surgery, and medical treatment is the hour of need to promote fracture healing and improve quality of life.^[5]

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