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## INTRODUCTION

Decreased bone mineral density is the major public health problem with prevalence in India as high as one out of two postmenopausal women along with one out of five men aged more than 60 years(1). Vertebral fracture poses to be independent risk factor for fragility fracture irrespective of BMD1.VF analysis by DXA scan is reliable along with accurate method with low radiation exposure and cheaper than other conventional imaging(2).Genant approach is used for vertebral fracture grading system which is divided into three grades 1, 2 and 3 upon reduction in vertebral heights(3).

## PURPOSE

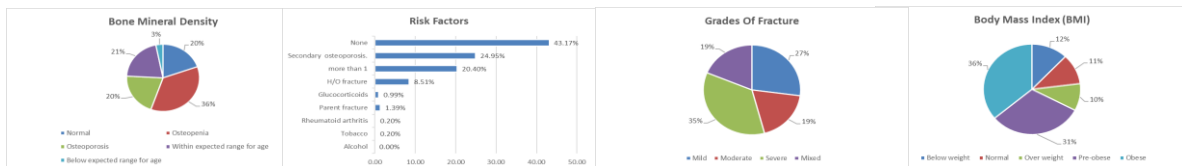
To evaluate the silent vertebral fractures on lateral vertebral assessment on DXA scan with grade of compression fracture and correspondence with FRAX as well as bone mineral density.

## METHODS

- Retrospective review of 505 DXA scan
- August, 2019 to August, 2020
- Cancer and non-cancer patients
- Incidental vertebral fractures along with symptoms, bone mineral density and risk factors

## RESULTS

- Females: 82%, Males:18% with mean age 47 years.
- Cancer patients 40% and non-cancer 60% among them 59% had pain with 41% pain free patients.
- Normal BMD 20%, osteopenia 36%, osteoporosis 20%, within normal range for age 21%, below range 3%.
- Based on fracture risk assessment (FRAX) 57% had risk factor: highest secondary osteoporosis 24%.
- BMI wise: 12% below weight, 11% normal, 10% over weight, 31% pre-obese and 36% obese.
- LVA showed fracture in 48 patients (10%), 10% asymptomatic. 81% had single fracture, mild 27% moderate 19%, severe 35%.
- 19% had multiple fractures. Per FRAX 37% more than 1 risk factors, 27% history of fracture, 17% secondary osteoporosis, 2% parental fracture, 8% no risk factor.
- BMD wise: Normal 9, osteopenia 22, osteoporosis 16, 1 BMD within range for age.



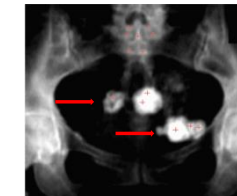
## CONCLUSION

In our population, 10% patients had unsuspected vertebral fractures lateral vertebral assessment (LVA) on DXA scan. This suggests that LVA should be routinely done with DXA.

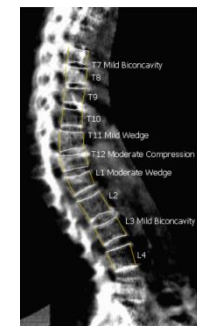
## REFERENCES

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## CASES



**Case1:** An 80 yrs old female with history of steroid therapy, rheumatoid arthritis, personal history of prior fracture and paternal history of fracture, presented with joint aches had incidental severe wedge fracture at T12 and moderate compression fracture at L1. Incidental note was made of calcified uterine fibroids in antero-posterior acquisition, (red arrows)



**Case2:** A 74 year old post menopausal woman presenting with generalized body aches. On LVA she was found to have mild biconcavity at T7 and L3, mild wedge at T11, moderate compression at T12 and moderate wedge at L1.

**Case3:** A 69 years old male with history of breast cancer and rheumatoid arthritis, presented with generalized body aches. On LVA severe compression fracture noted in T11.