

# Assessment of bone mineral density in patients with non functioning pituitary adenoma

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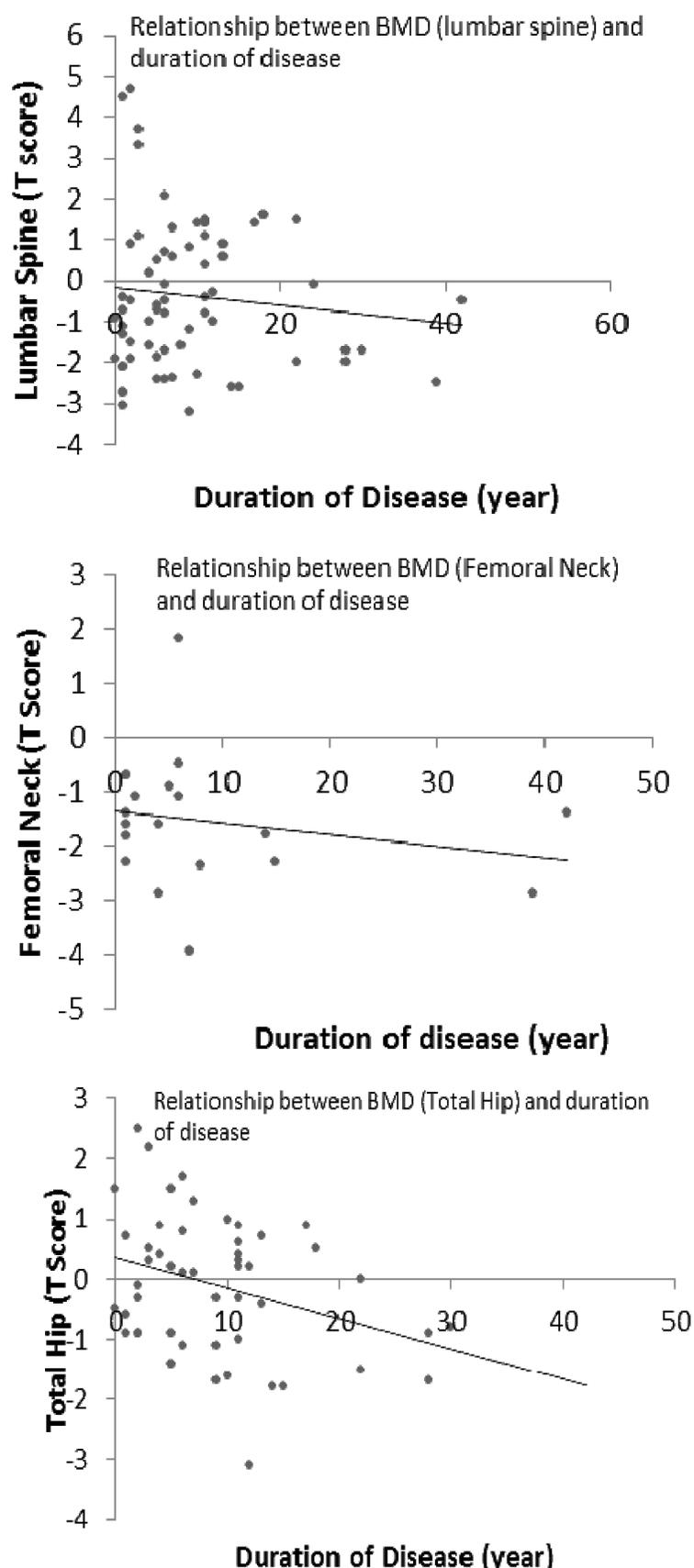
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## Introduction

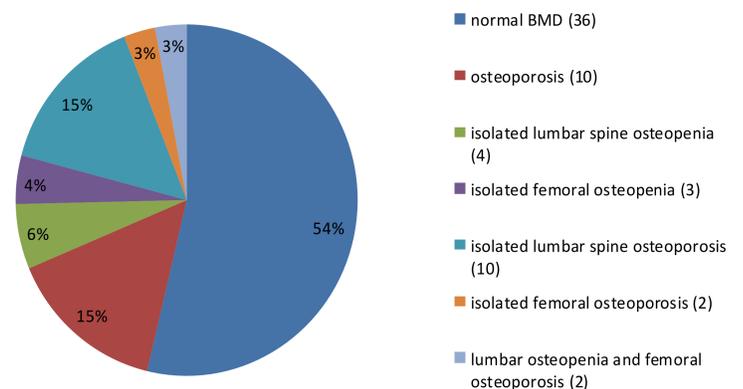
Pituitary disease either as a consequence of hormonal excess (Cushing's disease, Prolactinoma) or deficiency (GH, sex hormones) has been associated with adverse effects on the skeleton, defined by reduced bone mass and increased risk of fracture.

## Patients and Methods

We retrospectively analysed bone mineral density (BMD) scans of 67 patients (age range 18-86 yrs) with known non-functioning pituitary adenoma. Data were analysed in relation to age, gender, treatment and duration of disease. BMD (lumbar spine, femoral neck and total hip) was assessed by dual energy X-ray absorptiometer (DXA) using a Lunar Prodigy densitometer in a single Unit within the Leeds Teaching Hospitals NHS Trust.



## Percentage of Overall Bone Mineral Density



## Duration of the disease

The duration of the disease varies from 0 - 42 years, with an average duration of 9.08 years.

## Age Range

5.97% (4 patients) are between 18 - 40 years, 43.28% (29 patient) between 41 - 60 years and 50.74% (34 patients) are between 61 - 86 years.

## Gender

61.19% (41 patients) are male and 38.8% (26 patients) are female.

## Radiotherapy

59.7% (40 patients) received Radiotherapy. Among them 70% (28 patients) had normal BMD, 22.5% (9 patients) had osteopenia and 7.5% (3 patients) had osteoporosis. 16.41% (11 patients) developed osteopenia and 1.49% (1 patients) had osteoporosis even without radiotherapy.

## Treatment

29.85% (20 patients) received growth hormone replacement. Among them 19.4% (13 patients) had normal BMD, 8.95% (6 patients) had osteopenia and 1.49% (1 patients) had osteoporosis.

50.74% (34 out of 67) received sex hormone replacement. Among them, 32.83% (22 patients) had normal BMD, 16.41% (11 patients) had osteopenia and 1.49% (1 patients) had osteoporosis.

8.95% (6 patients) needed vitamin D supplement, though Vitamin D is not routinely measured in this cohort. Among them 5.97% (4 patients) had normal BMD and only 2.98% (2 patients) had osteopenia.

61.19% (41 patients) were taking hydrocortisone. Among them, 29.85% (20 patients) had normal BMD, 23.88% (16 patients) developed osteopenia and 5.97% (4 patients) had osteoporosis.

## Conclusion

Radiotherapy, hormonal deficiencies or hormonal replacement did not influence outcome of BMD. However the longer duration of the disease, the more bone mass loss is seen.