

investigations including renal and liver function, serum calcium, vitamin D, testosterone and oestradiol levels. Osteoporosis-associated factors were identified using logistic regression and adjusted with confounders.

RESULTS

Our patients had a mean age of 73.1 years old (SD 7.2), with 62.6% being Malay (n = 67) and a mean BMI of 24.96 (SD 4.31). Among PCa patients treated with ADT, the prevalence of osteoporosis was 57.9% (n = 62), osteopenia was present in 39.3% (n = 42), and only 2.8% (n = 3) had normal bone mineral density. The most vulnerable site was the 1/3 radius with the highest osteoporosis prevalence of 43% (n = 46), followed by femoral neck at 29% (n = 31), lumbar spine at 22.4% (n = 23), and total hip at 11.2% (n = 12). Several predictive factors of osteoporosis were identified, including the absence of calcitriol usage (Adjusted Odd Ratio (AOR) = 5.07, CI 1.04-24.75, $p = 0.04$), duration of ADT (AOR = 1.02, CI 1.0-1.04, $p = 0.03$), and ongoing ADT (AOR = 5.08, CI 1.169-22.09, $p = 0.03$). In contrast, a higher weight conferred a lower risk for osteoporosis (AOR = 0.957, CI 0.92-0.99, $p = 0.01$).

CONCLUSION

This study highlights the importance of screening for osteoporosis in men who are undergoing ADT for PCa. Peripheral BMD is an effective tool to assess their bone health. Various risk factors, such as being underweight, not receiving calcitriol, continuous ADT, and longer treatment duration, can increase the likelihood of osteoporosis.

EP_A087

A RARE CASE OF RECURRENT PARATHYROID CARCINOMA

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INTRODUCTION/BACKGROUND

One of the rare causes of primary hyperparathyroidism is parathyroid cancer. It is usually diagnosed post-operatively with histopathology. Surgery is always definitive in parathyroid carcinoma, but there have been reported recurrences of parathyroid cancer up to 20 years after a successful surgery. We report a case of a 61-year-old male who had bilateral inferior parathyroid carcinoma, surgically cured in 2020, but had a recurrence of parathyroid carcinoma after 3 years.

CASE

A 54-year-old male presented with headaches and dizziness and was suspected of having had a stroke. Further investigations revealed that the patient had primary hyperparathyroidism, with a corrected calcium level of 3.56 mmol/L (normal range 2.1-2.55), a phosphate level of 0.93 mmol/L (normal range 0.74-1.52), and an iPTH level of 148.28 pmol/L (normal range 1.59-7.24). Thyroid ultrasound detected a bilateral enlarged inferior parathyroid gland measuring 1.5 x 1.3 cm and 1.6 x 1.3 cm, and a SESTAMIBI scan confirmed the presence of parathyroid hormone hypersecretion. He underwent a successful bilateral inferior parathyroidectomy, and a histopathological examination revealed parathyroid carcinoma. He remained normocalcaemic, but his iPTH levels increased with time, from 12.05 pmol/L to 30.23 pmol/L. A subsequent ultrasound of the thyroid showed a tiny extra-thyroidal lesion adjacent to the left internal jugular vein, and a repeat SESTAMIBI scan revealed concordant parathyroid hypersecretion over the left superior thyroid gland. However, a neck CT scan failed to locate the lesion. Parathyroid carcinoma is commonly related to Multiple Endocrine Neoplasia (MEN Syndrome) and familial isolated hyperparathyroidism. 4D CT, MRI, and hybrids of SESTAMIBI and CT/MRI enable more precise localization of ectopic disease glands.

CONCLUSION

It is important to have lifetime surveillance for parathyroid carcinoma survivors, as the recurrence rate is high despite surgery, with a mean survival of 6-7 years.

EP_A088

25 HYDROXY-VITAMIN-D LEVEL INVESTIGATION AND MANAGEMENT: CLINICAL AUDIT IN A TERTIARY HOSPITAL IN CENTRAL PAHANG, MALAYSIA

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INTRODUCTION/BACKGROUND

The prevalence of vitamin D deficiency in Malaysia in different populations has been quoted to be between 20 to 90%. Adequate vitamin D in food sources, sun exposure, or supplementation are preventative measures for vitamin D deficiency. Vitamin D level screening is limited by resources in government hospitals and targeted screening in high-risk patients are performed. This study was conducted to ascertain the practice of 25-hydroxyvitamin D screening and management of vitamin D deficiency.

METHODOLOGY

All patients with 25-hydroxyvitamin D levels done at the Hospital Sultan Haji Ahmad Shah, Temerloh in 2023 were included. Patient demographic data, clinical profile, 25-hydroxyvitamin D and vitamin D deficiency management were assessed through electronic medical records.

RESULTS

A total of 126 samples of 25-hydroxyvitamin D were done in 2023 for 100 patients. Majority were paediatric patients (65%) and the rest were adult patients (35%). Mean 25-hydroxyvitamin D levels for adult and paediatric patients were 44.5 nmol/L and 99.8 nmol/L respectively. Most of the investigations were for screening of 25-hydroxyvitamin D status (68.6%) while 21.4% were for monitoring of 25-hydroxyvitamin D levels for patients who are already undergoing vitamin D treatment.

Common indications for 25-hydroxyvitamin D in paediatric patients included renal disease (24.6%), prematurity (16.9%), hypocalcaemia (9.2%) and high ALP (7.6%). In adult patients, common indications included renal disease (20%), hypocalcaemia (11.4%), hypercalcaemia (7.6%) and osteoporosis (7.6%).

Vitamin D deficiency was present in 43.1% (n = 28) of paediatric patients and 54.3% (n = 19) of adult patients. Among paediatric patients with vitamin D deficiency, 67.9% (n = 19) were treated with inactivated vitamin D while 25% (n = 7) did not receive any treatment. Among adult patients with vitamin D deficiency, 15.7% (n = 3) were treated with inactivated vitamin D and 42.1% (n = 8) did not receive any treatment.

CONCLUSION

There was a huge discrepancy in the number of 25-hydroxyvitamin D samples sent in adult and paediatric patients, which may indicate lower awareness of vitamin D screening among adult patients. The high proportion of adult patients with vitamin D deficiency who are not optimally managed with vitamin D supplementation reflect the need to standardize and monitor vitamin D treatment in the hospital.

EP_A089**TRANSIENT OSTEOPOROSIS SECONDARY TO TENOFOVIR**

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INTRODUCTION/BACKGROUND

Tenofovir is the first-line antiviral therapy for chronic hepatitis B, however, long-term use may induce osteoporosis. This is a case of a patient who developed transient osteoporosis after chronic use of tenofovir.

CASE

A 57-year-old male with chronic Hepatitis B on tenofovir, presented with a 2-year history of progressive limb weakness, myalgia, and weight loss of 6 kg. He sustained a low impact fracture of his left ankle 2014 and incidentally noted a right pelvic fracture through an MRI of the pelvis in 2017. His blood parameters were normal including serum calcium, phosphate, vitamin D and parathyroid hormone levels. First BMD examination in 2018 showed severe osteoporosis with a T-score of -4.9 and -4.7 for the distal one-third of the left forearm and spine respectively. Serial BMD examination one year later, showed the persistence of severe osteoporosis with a T-score of -3.4, -3.3 at the hip and spine respectively. Moreover, there was a worsening of T-score to -6.0 at the distal one-third of the forearm. He was then initiated on oral bisphosphonate. Additional proximal myopathy workup including FDG-PET scan, CECT Thorax, abdomen and pelvis and muscle biopsy were all normal. EMG showed diffuse neurogenic with secondary myogenic changes, suggestive of a metabolic aetiology. Thus, tenofovir was switched to entecavir and lamivudine after all other metabolic causes were ruled out. Osteoporosis treatment with oral bisphosphonate and vitamin D supplements was continued. The latest BMD examination in 2024 showed a markedly improved T-score and resolution of his osteoporosis.

CONCLUSION

Tenofovir may lead to osteoporosis development through directly altering osteoclasts and/or osteoblasts activity. Furthermore, literature showed it can also affect the proximal renal tubules and vitamin D metabolism. Hence, close monitoring of tenofovir plasma concentrations coupled with renal and bone function is essential. Early detection, diagnosis, and treatment of osteoporosis induced by these drugs should be emphasized.