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A Case Of Tenofovir Induced Osteopenia

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Clinical history

A 33-Year-old female patient who is a known case of retroviral disease, diagnosed in 2013 was on TLE regime (TENEFIVIR 300MG, LAMIVUDINE 300MG, EFAVIRENZ 600MG), now complaints of generalized bone pain for 2-3 months.

No history of fever, cough, any localized swelling, weight loss, rashes. Her menstrual cycles are regular with moderate amount of flow.

Past history includes TB pleural effusion, TB meningitis, Paradoxical TB IRIS, bacterial pneumonia for which she underwent treatment.

Not a known case of diabetes mellitus, hypertension, cardiac disease, thyroid disorder, asthma, epilepsy.

Non-smoker, non-alcoholic.

Examination

GPE: Middle aged female patient moderately built and nourished, well oriented to time, place, person. Is alert, conscious and cooperative.

Pulse: 80 bpm

Blood pressure: 130/80 mm hg

Temperature: 97.4* F

Respiratory rate: 18 cpm

No pallor, icterus, cyanosis, clubbing, edema, lymphadenopathy.

SYSTEMIC EXAMINATION: RS: B/L NVBS, No added sounds

CVS: S1, S2 heard. no murmurs

P/A: Soft, non-tender. Mild hepatomegaly +. Normal bowel sounds. CNS: No focal neurological deficits.

Investigations

Hb: 10.6 gm/dl

TLC: 7000 cells/mm³

Urea: 18 mg/dl

Creatinine: 0.8 mg/dl

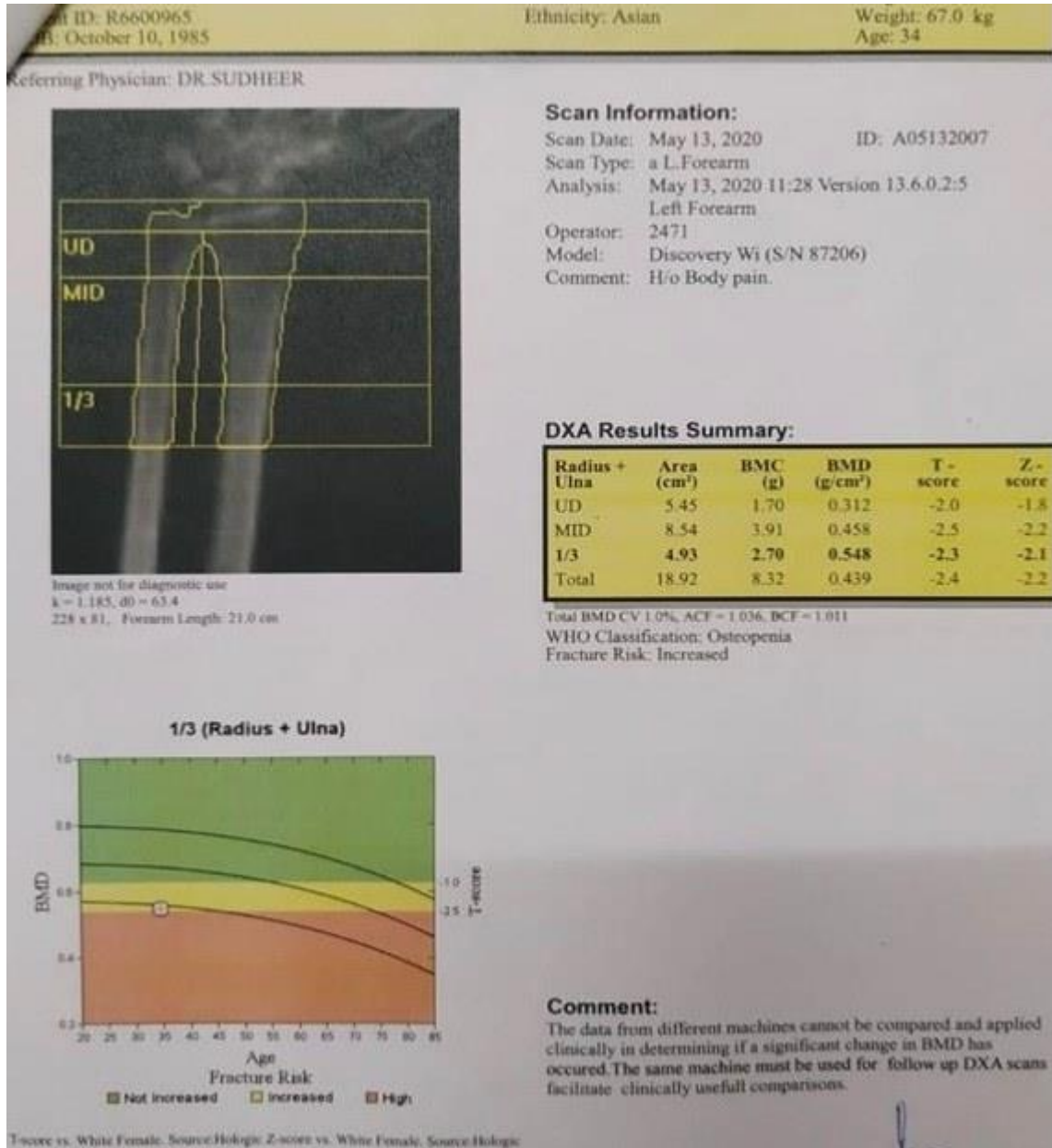
SGOT: 22 IU/L

SGPT: 6 IU/L

Viral load: < 20 copies / milliliter

CD4 count: 600 cell/mm³

Bone Mineral Density report is suggestive of Osteopenia



BMD Scan

Diagnosis

TENEOFVIR INDUCED OSTEOPENIA

Treatment

Tenofovir was discontinued and her ART regimen was substituted to ABACAVIR 600MG, LAMIVUDINE 300MG, EFAVIRENZ 600MG once daily.

Discussion:

Tenofovir is a monophosphate nucleotide which is active against HBV and HIV. It acts by inhibiting HIV reverse transcriptase enzyme. Due to its low oral absorption, it is used as tenofovir disoproxil ester prodrug. It has relatively fewer side effects which include nausea, abdominal discomfort; slight increase in serum creatinine, chronic renal disease.(1)

Lately it has been shown that long term usage of tenofovir is associated with loss of bone mineral density. Studies have shown that there is approximately 1-3% greater bone mineral density loss with Tenofovir containing regimen.(2)

Osteopenia and fractures are associated with HIV infection itself but tenofovir also leads to increased bone catabolism markers and decreased bone mineral density.(3)

Also, a note on IMMUNE RECONSTITUTION INFLAMMATORY SYNDROME (IRIS)– It is the paradoxical worsening of preexisting opportunistic infection following initiation of antiretro viral therapy.

IRIS related to known pre-existing infection or neoplasm is known as paradoxical IRIS, while IRIS associated with previously undiagnosed condition is known as unmasking IRIS. (4)

References

1. K.D TRIPATHI, 8TH EDITION, TEXTBOOK OF PHARMACOLOGY.

2. Grant PM, Cotter AG. Tenofovir and bone health. *Current opinion in HIV and AIDS*. 2016 May;11(3):326.

3. Conesa-Buendía FM, Llamas-Granda P, Larrañaga-Vera A, Wilder T, Largo R, Herrero-Beaumont G, Cronstein B, Mediero A. Tenofovir causes bone loss via decreased bone formation and increased bone Resorption, which can be counteracted by dipyridamole in mice. *Journal of Bone and Mineral Research*. 2019 May;34(5):923-38.

4. HARRISON`S PRINCIPLES OF INTERNAL MEDICINE, 20TH EDITION.