

Bone Mineral Density in HIV/AIDS: A Case Control Study with Review of Literature

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Abstract

Theoretical :

Foundation: With the approach of Anti-Retroviral Therapy (ART) and prophylactic anti-microbial treatment future of HIV/AIDS patients has expanded. The center has now moved from transferable to non-transmittable maladies. The attention to bone wellbeing in HIV is missing among the doctors who are rewarding People Living with HIV/AIDS (Human Immunodeficiency Virus/Acquired Immuno Deficiency Syndrome) (PLHA). Point of this investigation is to discover the pervasiveness and hazard elements of low bone mineral thickness in PLHA and furthermore the importance of nutrient D on bone wellbeing.

Strategies: The examination was a case control study led in a tertiary consideration community in heart of Delhi, India, over a time of 15 months (March 2013 to June 2014). Consenting patients with HIV, matured over 18 years, structure the subjects of the examination. Sound people were taken as controls. Both the gatherings were assessed for bone infections, customary hazard variables and HIV related hazard factors.

Results: Among cases, 88.3% had low bone mineral thickness when contrasted with 31.7% in the control populace. In the hazard factors, there was no measurable distinction found between the two gatherings as far as physical action ($p=0.098$), sun introduction ($p=0.196$), calcium admission ($p=0.273$), history of liquor utilization ($p=0.853$), history of smoking ($p=0.852$). BMD among non-smokers ($p=0.00$) in both the gatherings and history of breaks ($p=0.013$) were factually noteworthy between both the gatherings. Term of HIV contamination ($p=0.553$), middle supreme CD4 check ($p=0.128$) and the middle viral burden ($p=0.743$) were not altogether identified with bone thickness. So also tenofovir based ART routine was likewise not related fundamentally with bone mineral thickness in our investigation ($p=0.417$). Relationship of nutrient D lack with low BMD in the middle of both case and control bunches was measurably huge ($p=0.00$). The mean of FRAX score in study bunch was $2.387(\pm 3.5805)$ % and in the control was $0.902(\pm 2.3709)$ %. The thing that matters was measurably huge ($p=0.00$).

End :

HIV tainted people have multiple times more danger of growing low BMD than uninfected people. Conventional hazard components and HIV related elements don't have a relationship with this low BMD. Nutrient D lack is a huge hazard factor for low BMD in both HIV tainted and uninfected populace.

Catchphrases :

Bone Mineral Density; Osteoporosis; HIV; PLHA

Presentation :

Hostile to Retroviral Therapy (ART) has altogether diminished the mortality and horribleness related with HIV/AIDS. Presently the consideration has moved to beforehand less coincidental conditions, for example, expanded cardiovascular hazard, osteoporosis and harm. The consciousness of bone wellbeing in India is missing among the doctors and maybe isn't a need for specialists the individuals who are rewarding People Living with HIV/AIDS (PLHA).

Osteoporosis is sickness of bone where compositional and building changes happen in the bone tissue course of action prompting debilitating of the skeleton bringing about expanded probabilities of delicacy crack [1]. World Health Organization (WHO) has grouped this low thickness of bone as osteoporosis or osteopenia dependent on bone densitometry. Osteoporosis is characterized when thickness is underneath $- 2.5$ occasions the standard deviation and osteopenia when the outcome is between $- 1$ and $- 2.5$ occasions the standard deviation.

Nutrient D insufficiency is wild in India and is a significant hazard factor contributing towards low bone thickness even in individuals living with HIV/AIDS. This examination was directed at tertiary consideration referral focus to evaluate the bone wellbeing in PLHA. As osteopenia/osteoporosis can prompt the crack, there might be further increment the dismalness and cost of treatment. Therefore it is basic that doctors deal with HIV should mindful of its impact on bone wellbeing.

Points and Objectives :

To examine the bone mineral thickness and survey the hazard variables of creating osteopenia/osteoporosis in patients of HIV/AIDS.

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Materials and Methods :

The investigation configuration was case control study directed in a tertiary consideration community in heart of Delhi, India. The clinic takes into account all areas of society henceforth the investigation populace is reflecting of society. The examination was directed over a time of 15 months (March 2013 to June 2014). Individuals living with HIV/AIDS, matured over 18 years, analyzed by two diverse ELISA as per WHO technique II [3], were remembered for the examination subsequent to acquiring an educated assent. Patients were barred on the off chance that they were: pregnant, known instances of bone infections, or on calcium supplements/bisphosphonates/tereparatide/denosumab for >3 months, determined to have mental ailment, analyzed to have hypothyroidism, pregnant. Solid consenting subjects who didn't give any huge clinical history were taken as control. For control populace nutrient D (25(OH) Vitamin D) and bone densitometry were done adjacent to other pertinent history.

Assent was taken from all patients and furthermore from control bunch for the examination. Itemized history was taken with respect to HIV related and conventional hazard factors for creating osteopenia/osteoporosis.

Hazard factors identified with HIV contamination are span of HIV disease, past CD4+ check and viral burden (in as of now analyzed cases) and tenofovir based enemy of retroviral routine.

Customary hazard factors are lacking sun introduction, deficient physical movement, diet with respect to calcium admission, nearness of past cracks (delicate/horrendous), smoking and liquor addiction.

All subjects were analyzed and loads were recorded by electronic gauging machine and tallness was estimated by stadiometer. Weight list was determined by utilizing equation (Quetlet's list): $\text{weight (kg)/height(m)}^2$. Musculoskeletal assessment was done which incorporates assessment of spine (kyphoscoliosis, ankylosis, and so forth.), stride and position.

We researched the subjects with CD4+ T lymphocyte check, HIV viral burden, nutrient D levels in the serum as 25(OH) Vitamin D and Bone Mineral Density (BMD) with DEXA examine. We estimated the crack hazard in the two gatherings with FRAX device.