

Serum 25-Hydroxyvitamin D Levels and Depression in Persons with Human Immunodeficiency Virus Infection: A Cross-Sectional and Prospective Study

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Abstract : Background: Human Immunodeficiency Virus (HIV) infection has been frequently associated with vitamin D deficiency and depression. Vitamin D deficiency increases the risk of depression in people without HIV. We assessed the cross-sectional and prospective associations between serum concentrations of 25-hydroxyvitamin D (25(OH)D) and depression in a HIV-positive people. Methods: A survey was conducted among 316 HIV-positive people aged 20-60 years residing in Kathmandu, Nepal for a cross-sectional association at baseline, and among 184 participants without depressive symptoms at baseline who responded to both baseline (2010) and follow-up (2011) surveys for prospective association. The competitive protein-binding assay was used to measure 25(OH)D levels and the Beck Depression Inventory-Ia method was used to measure depression, with cut off score 20 or higher. Relationships were assessed using multiple logistic regression analysis with adjustment of potential confounders. Results: The proportion of participants with 25(OH)D level of <20ng/mL, 20-30ng/mL, and >30ng/mL were 83.2%, 15.5%, and 1.3%, respectively. Only four participants with 25(OH)D level of >30ng/mL were excluded in the further analysis. The mean 25(OH)D level in men and women were 15.0ng/mL and 14.4ng/mL, respectively. Twenty six percent of participants (men:23%; women:29%) were depressed. Participants with 25(OH)D level of < 20 ng/mL had a 1.4 fold higher odds of depression in a cross-sectional and 1.3 fold higher odds of depression after 18 months of baseline compared to those with 25(OH)D level of 20-30ng/mL (p=0.40 and p=0.78, respectively). Conclusion: Vitamin D may not have significant impact against depression among HIV-positive people with 25(OH)D level below normal (> 30ng/mL).

Keywords : depression, HIV, Nepal, vitamin D

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