

# Emerging Association between Serum Vitamin D and Degree of Anemia in Visceral Leishmaniasis

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## Opinion

Visceral Leishmaniasis (VL) is one of the neglected tropical diseases in the world. It becomes fatal if not diagnosed/or treated on time. The causative agent of the disease is protozoan parasite *Leishmania donovani*. About 500,000 new cases of VL occur annually all over the world [1]. The disease is prominently present in the States of Bihar, West-Bengal, parts of North-East and few parts of Himachal Pradesh. The people living in the endemic areas of the disease are always at risk of infection. More than 90% cases are anaemic, which is one of the risk factors. The degree of anemia in VL is moderate to severe and if not resolved on time may further complicate the disease. Vitamin D deficiency and anaemia are common public health problems in both acute and chronic illness. Deficiency of vitamin D may develop risk of anaemia [2]. The role of vitamin D in the regulation of leishmaniasis is well documented [3]. The therapeutic and immune-regulatory effect of vitamin D3 (cholecalciferol) in resolution of various infectious

diseases is reported [4]. However, no report is available about the association between serum vitamin D concentration and degree of anaemia in VL. Institute Ethics Committee (IEC) clearance and patient consent were obtained for this study. The VL patients were classified for anemia as mild, moderate, and severe based on haemoglobin (Hb) concentration according to World Health Organization [5]. The serum 25 (OH) D assay was determined by Fluorescence Immunoassay (FIA) on iCHROMA II™ immune assay analyzer among adult male VL subjects (n=25). The serum vitamin D concentrations < 25 nmol/L, 25-75 nmol/L and 75-250 nmol/L were considered as deficient, insufficient, and sufficient respectively. Our preliminary observation revealed that mean vitamin D concentration decreases as degree of anaemia increases (Figure 1). The present observation provides an insight about the emerging association of vitamin D with degree of anemia in VL patients. Hence, the therapeutic importance of vitamin D among VL patients' needs to be explored in clinical practice.

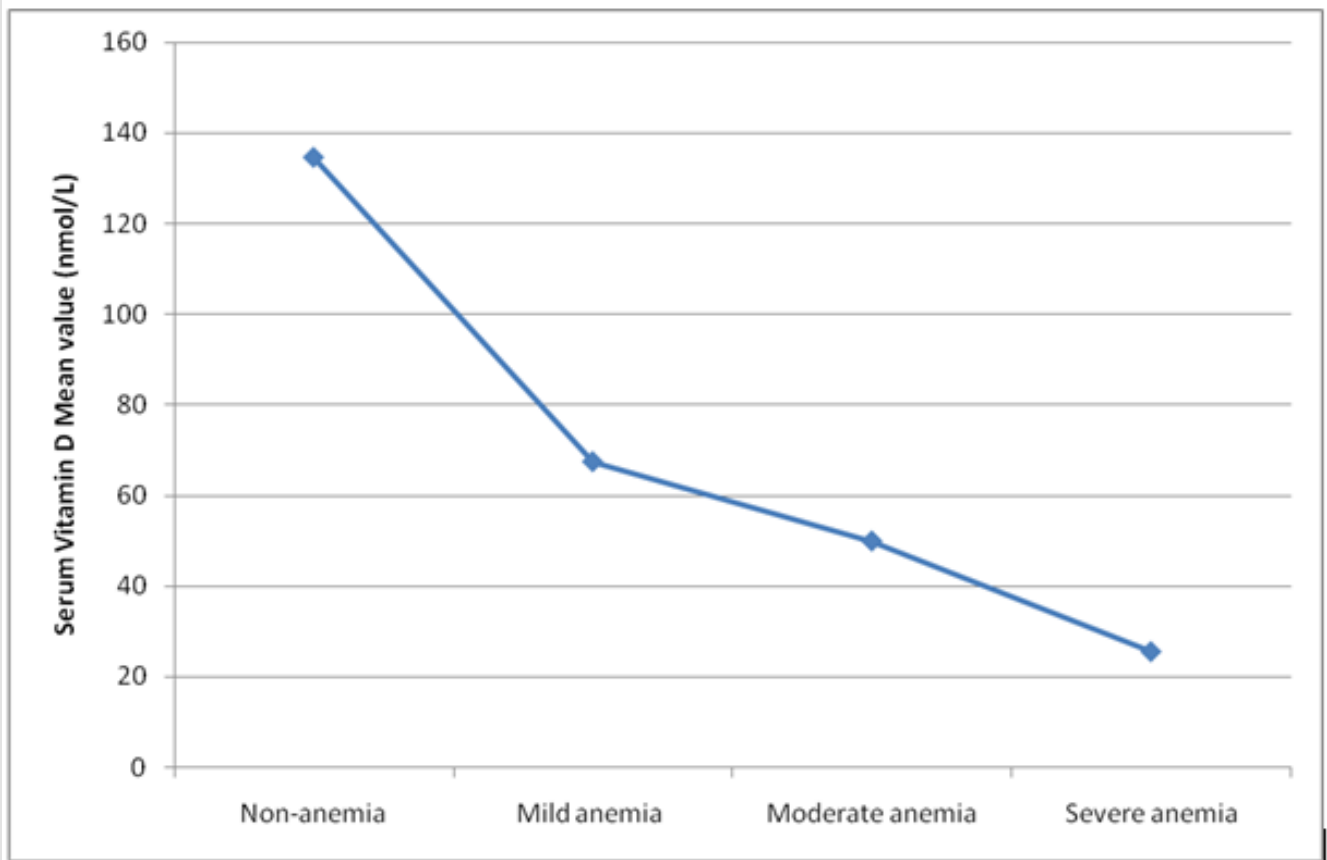


Figure 1: Association between serum vitamin D level and anemia severity in VL Patients.

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None.

### Ethics Approval Statement

The study protocol was approved by Institute Ethics Committee (IEC): 02/RMRI/EC/2019 dated 20 June 2019.

### Declaration of Competing Interest

The author(s) declare(s) that there is no conflict of interest.

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