



# VITAMIN D AND TYPE 1 DIABETES MELLITUS IN CHILDREN



**Harjoedi Adji Tjahjono**

*Endocrinology Division Pediatric Department, Saiful Anwar General Hospital, University of Brawijaya, Malang, East of Java, Indonesia*

## BACKGROUNDS

The understanding of the effects and role of vitamin D and its analogues in the functioning of body tissues, systems and organs has improved substantially over the last decade. The potential extra-skeletal role of vitamin D has been a rich area of interest and research over the last decade. Vitamin D deficiency has been implicated in a variety of chronic diseases, including bone mineral disease, autoimmunity, cancer, and diabetes. Many epidemiological studies have found high prevalence of vitamin D deficiency in children with type 1 diabetes mellitus, suggesting a strong relationship between the two.

## OBJECTIVE

Aims of this study were to measure 25 hydroxy vitamin D (25 OHD) level in type 1 diabetes mellitus and to compare them with 25 hydroxy vitamin D (25 OHD) levels in non-diabetic subjects at the same period.

## METHODS

A cross sectional study was carried out between 2018 - 2019. This study including 40 patients with type 1 diabetes mellitus at Saiful Anwar Hospital, Malang, Jawa Timur and 40 children non - diabetic control children. Clinical data 25OHD serum level were collected and measured with Enzyme-linked Immuno Assay (ELISA) method. A serum plasma 25(OH)D concentration of <20 ng/ml was considered as deficiency, a concentration between 21 and 29 ng/ml as insufficiency, and a plasma concentration above 30 ng/ml as normal (sufficient).

## RESULTS

The mean serum 25OHD in type 1 diabetes mellitus children was  $20.35 \pm 5.28$  ng/ml (range 1.07 – 26.64 ng/ml) and in the controls was  $29.46 \pm 4.07$  ng/ml (range 2.86 – 33.3 ng/ml). The mean serum 25OHD in type 1 diabetes mellitus children was lower than that of controls ( $P=0.69$ ).



## CONCLUSION

Children with T1DM have lower vitamin D levels than control group.

## KEYWORDS

Vitamin D, type 1 diabetes mellitus, children and adolescents.

