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Bone mineral density assessment in type 1 diabetes mellitus

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ABSTRACT

Objective: To assess the bone mineral density in children with type 1 diabetes

Study design: This is a cross sectional study conducted at Department of Endocrinology, Sri Venkateswara Institute of Medical Sciences, Tirupati

Methodology:

Twenty two patients of type 1DM following up at Juvenile diabetes clinic at SVIMS were included in the study. Following data were recorded - weight, height, body mass index(BMI), HbA1c, bone mineral density (BMD). BMD was measured with DXA scanner (HOLOGIC Europe, Discovery QDR series, Belgium) using Asian database . Patient with BMD Z score <-2 were defined as having low bone mass. Ht SDS and BMI SDS were calculated based on available standard data tables.

Results: Twenty two patients who were 7-20 years old were enrolled in the study, of which 8(36%) were males and 14(64%) were females. Median total lumbar spine BMD Z score was -1.15 with IQR (-1.95- -0.5), median femoral neck BMD Z score was -1.15 with IQR (-1.10- -0.5).

Proportion of patients with total lumbar Z score < -1 was 63.63%, while the proportion of patients with total lumbar Z score < -2 was 22.72%. Proportion of patients with femoral neck Z score < -1 was 50%, while the proportion of patients with femoral neck Z score < -2 was 4.54%. BMD at femoral neck showed a negative correlation with the age of the patient.

Conclusion: Majority of the children with type 1 DM had BMD (Lumbar - 63% & Hip-50%) 1 SD below the mean for the general Asian population probably due to metabolic effects on bone. Older children are more susceptible to the deleterious effect of type 1 diabetes on the hip BMD. Thus type 1 diabetic patients should be evaluated for their Bone mineral density and offered appropriate preventive measures.

Sunil E, Rajita D, Arun M, Sailaja P, Sreenivas CH, SangeethaS,Rajagopal G, Satish P, Suresh V,Sachan A. Bone mineral density assessment in type 1 diabetes mellitus. JClinSci Res 2013;2(Suppl 1):S3.