

# ONCODAILY MEDICAL JOURNAL

*abstract*

## **Prevalence Of Osteonecrosis In Survivors Of Childhood Acute Lymphoblastic Leukaemia Of Indian Ethnicity Treated With BFM Protocol**

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*abstract*

## Prevalence Of Osteonecrosis In Survivors Of Childhood Acute Lymphoblastic Leukaemia Of Indian Ethnicity Treated With BFM Protocol

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**Introduction:** There is paucity of data from low-middle income countries (LMIC) on osteonecrosis (ON) in survivors of childhood acute lymphoblastic leukaemia (cALL-survivors). We conducted this study to estimate prevalence of ON in cALL-survivors of Indian ethnicity and factors affecting it.

**Methodology:** This cross-sectional study enrolled cALL-survivors post completion of treatment. ON was estimated using magnetic resonance imaging of the hip joint. Demographic, anthropometric, therapy/disease-related and biochemical/endocrine factors affecting calcium homeostasis were studied in two groups: with and without ON.

**Results:** Total of 61 out of enrolled 87 cALL-survivors with median age 118 months (range:84 – 283) were analysed after median 12 months (range:1 – 113) post completion of therapy. Two-third of the cohort was male and 41% were pubertal. 5/61 (8.2%) were found to have asymptomatic and non-traumatic ON. Three ON were grade II and two were grade III as per Niinimäki radiological classification.

Cumulative doses (CD) of dexamethasone, glucocorticoids (GCs), L-asparaginase, anthracycline and low serum vit D levels were associated with ON. Other demographic factors including age at diagnosis > 10 years, disease-related, therapy-related factors including cranial irradiation and biochemical/endocrine factors were not associated with ON. The median CD of dexamethasone ( $p=0.004$ ) and GCs ( $p=0.008$ ) were significantly high in groups with ON. Median CD of methotrexate ( $p=0.051$ ), anthracycline ( $p=0.058$ ) and serum vit D levels ( $p=0.054$ ) along with serum alkaline phosphatase levels ( $p=0.06$ ) had a trend towards significance but were not statistically significant in ON group.

**Conclusion:** The prevalence of ON in our cohort of cALL-survivors was 8.2%. Higher CD of GCs including dexamethasone as confirmed by their higher median CD exposure was the single-most risk factor associated with ON in our cohort. Follow-up multi-centric studies with a large number of subjects are required from LMIC to exactly outline the prevalence of ON in cALL-survivors and factors affecting it.