



OSTEONECROSIS IN CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA: A REPORT FROM CHILDREN'S CANCER HOSPITAL IN EGYPT (CCHE).

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Introduction

As survival rates for children with acute lymphoblastic leukemia (ALL) improve, awareness of treatment complications becomes increasingly important. Osteonecrosis (ON) is a serious disabling complication of ALL treatment occurring in 15% to 38% of the patients. The aim of the study was to define the frequency of ON identified by Magnetic Resonance Imaging (MRI) and to study the risk factors for ON.

Materials and Methods

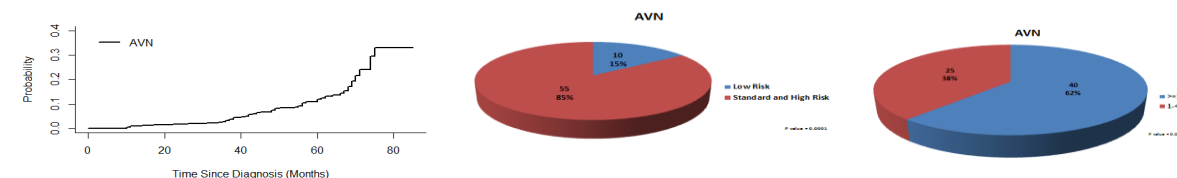
Frequency of ON was evaluated retrospectively in 861 patients with ALL, diagnosed at CCHE from January 2009 to December 2012 and followed till December 2015. Patients were treated with St Jude ALL Total Study XV, which constitutes dexamethasone-based maintenance therapy. ON was identified by MRI done during or after treatment.

Results

Out of 861 patients evaluated, 665 were eligible for the study, 65 patients (9.7%) developed ON. The cumulative 5-year incidence of ON was 11.96 % (SE, 0.131%). The mean time to develop ON was 21 months from diagnosis. Out of 155 patients aged 10 years and above, 40 patients (25.8%) developed ON. The mean age for patients with ON was 10.7 years.

The prognostic factors with significant relationship to ON by univariate analysis were age 10 years and above ($P=0.0001$) and Standard/High risk group ($P=0.0001$). However, gender wasn't statistically significant.

At the onset of ON, the mean cumulative dexamethasone dose was 796 mg/m² and the mean total corticosteroids dose, calculated as prednisolone equivalence, was 6,431 mg/m². Out of 43 patients who developed ON while still on corticosteroids therapy, 36 patients (84%) required dexamethasone dose modification and/or stopping. The most common joints for ON were the hip (66%) followed by the knee (27.7%). Surgical intervention was required in 27.6% of the patients with ON.



Conclusion

The frequency of ON among the studied patients was 9.7%. Risk factors with significant association with ON were older age and more intensive corticosteroid therapy.