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EVALUATION OF LIVER FUNCTION TESTS TO IDENTIFY HEPATOTOXICITY IN ACUTE LEUKEMIA.

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INTRODUCTION

Abnormal liver function tests (LFTs) are commonly observed in acute leukemia (AL) either at diagnosis ,or through treatment with chemotherapy. AL commonly present with elevated aminotransferases and hyperbilirubinemia, likely due to leukemic infiltrates.

AIM

The aim is to evaluate hepatic toxicity and its impact on the outcome of AL cases.

METHOD

A prospective cross-sectional study (NCT06383325) on newly diagnosed AL cases in Clinical Hematology Unit, Assiut University Hospitals through November 2023 to May 2024.

History taking, examination and laboratory tests; CBC, LFTs and bone marrow aspirate/biopsy were conducted at diagnosis and after 4 weeks.

RESULTS

Interestingly 20% (n=8) of the included cases had raised LFTs; AST, ALT and GGT with median(range) 40U/L (19-253), 37U/L (14-582), 42U/L (30-301) respectively. Four (10%) had raised total bilirubin 18.7umol/L (7.4-82) and raised ALP 81U/L (61-345) as well due to leukemic infiltrations. Noticeably all cases with raised LFTs were B-ALL cases.

LFTs 4 weeks post induction chemotherapy showed significant reduction in AST 24U/L (13-86) P=0.002, ALT 28.5U/L (4-69) P=0.008, total bilirubin 9.4umol/L (4.8-204) P=0.007 and ALP 66U/L (38-101) P<0.001 while GGT 80U/L (54-147) was raised in cases received Adriamycin containing regimens P=0.007 .

There was no significant difference in survival (P=0.8) between patients with normal *vs.* raised LFTs at diagnosis.

Table 1: Patients' characteristics:

Number	**40**
Male n (%)	**28 (70%)**
Age Median (range)	**41.5yr (32-61)**
Smokers	**4 (10%)**
Comorbidity	**12 (30%)**
Diagnosis n (%)	
AML	32 (80%)
M1/2	4
M3	16
M4/5	12
ALL	8 (20%)
B-ALL	8
At Diagnosis Median (range)	
CBC	
WBC	$10.3x10^9$/L (1-49.5)
ANC	$1.6x10^9$/L (0.1-36)
Hemoglobin	8.5 g/dl (5 -10.9)
Platelet count	$47x10^9$/L (16-744)
PB abnormal cells	25% (0-90)
BM abnormal cells	71% (25-90)
Molecular Study n (%)	
PML-RARA	16 (40%)
$FLT3^{MT}$	4 (10%)
NPM^{MT}+$FLT3^{WT}$	4 (10%)
Liver Function Test median(range)	
AST	40U/L (19-253)
ALT	37U/L (14-582)
GGT	42U/L (30-301)
Total bilirubin	18.7umol/L (7.4-82)
ALP	81U/L (61-345)

Figure 1:Induction chemotherapy

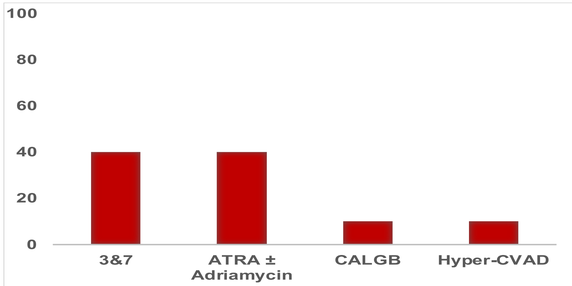
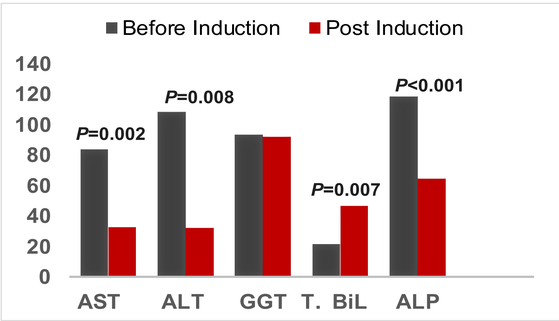


Figure 2: LFTs 4 weeks post induction chemotherapy



CONCLUSIONS

A considerable proportion of patients had hepatotoxicity at diagnosis (20%) with significant reduction in LFTs post induction except for GGT (Adriamycin based regimens). We are including more patients in different stages of chemotherapy protocols to understand the dimensions of hepatic toxicity in AL.

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