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612.ACUTE LYMPHOBLASTIC LEUKEMIAS: CLINICAL AND EPIDEMIOLOGICAL

Patterns of Care and Outcomes of Adults ≥ 40 Years of Age with Newly Diagnosed Acute Lymphoblastic Leukemia (ALL): A Multicenter Registry Analysis from India

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Introduction:
Survival outcomes in adults aged ≥ 40 years with acute lymphoblastic leukemia (ALL) are dismal at around 30% in clinical trial settings. Limited information exists on the outcomes and patterns of care in developing countries like India. The Hematology Cancer Consortium (HCC: https://www.hemecancer.org/) is a prospective registry that captures information on hematological malignancies across multiple centers in India. We analyzed the patterns of care and outcomes of adult ALL from the registry.

Methodology:
The study included all newly diagnosed ALL (age ≥ 40 years) from January 2019 to January 2021 entered into the database from twelve participating centers. Descriptive statistics were used to summarize the baseline characteristics and responses. The Kaplan-Meier (KM) method was used to analyze the survival outcomes, and the log-rank analysis was used to compare the different ALL subgroups.

Results:
261 adults aged ≥ 40 years with ALL were registered in the study period. Out of these, 92 patients refused therapy at the primary center due to financial limitations (n=21; 22.8%), poor performance status (n=25; 27.5%), referral to another center (n=29; 31.5%), or other reasons like apathy towards treatment (n=2; 2.2%), socio-cultural barriers (n=5; 5.4%) and few unknown causes. Of the 169 patients who received therapy, the age distribution was 40-49 years (n=100; 59.2%); 50-59 years (n = 51; 30.2%); ≥ 60 years (n =18; 10.7%). Of these, there were 105 males (62.1%). Extramedullary disease was seen in 32 patients (18.9%) at diagnosis [Testis (n=1); Mediastinum (n=6); Central nervous system (CNS) (n= 25)]. The median white blood cell count at baseline was 9.2 x 10^9 cells/Lt; 141 (83.4%) patients were classified as B ALL, and 28 (16.6%) had a T ALL. Genetic studies include conventional karyotype (n=105; 62.1%), FISH (n=75; 44.3%), PCR (n=110;62.7%), and ploidy analysis (n=113; 66.8%). Significant genetic abnormalities included hyperdiploidy (n = 16/113; 14.1%), t(12;21) (n = 3/53; 5.6%), and t(1;19) (n = 4/53; 7.5%). Bcr abl fusion abnormality was seen in 48 (28.4%) patients.
The BFM-type regimen was the most common protocol in 163 (96.4%) patients. HyperCVAD was offered to 6 (3.5%) patients. Imatinib (n=16) and dasatinib (n=27) were the only two tyrosine kinase inhibitor (TKI) drugs used to treat bcr-abl-positive

patients (n=43/48; 5 patients did not receive TKIs). Serious induction toxicities included pneumonia (n=34; 20.1%), tumor lysis syndrome (n=24; 14.2%), gram-negative sepsis (n=16; 9.4%), and venous thrombosis (n=7; 4.1%). Initial induction mortality was seen in 37 (21.8%) patients. Post-induction bone marrow assessment was available in 121 patients (71.6%), with a complete morphological remission rate of 101 (101/169, 59.7%). The minimal residual disease assessment (MRD) by flow cytometry at end induction was available in 87 patients, with 35 (40.2%) being MRD positive and 52 (59.7%) being MRD negative. Seven patients underwent an allogeneic stem cell transplant (n=6 in CR1; n=1 in CR2) [matched sibling donor transplants (n=6); haploidentical transplant (n=1)]. Forty-four patients (n=27.2%) relapsed [CNS (n=4), medullary (n=40)]. At the last follow-up, a total of 70 patients (41.4%) had died [progressive disease (n = 38), infection (n=17), others (n=15)], 44 (26%) were lost to follow-up, and 39 (23%) were alive and on follow up.

With a median follow-up of 15 months, the one-year O.S. was 53.8%. [B cell ALL-56.2%; T cell ALL-42.3% (p-value=0.093)] and the one-year P.F.S. was 48.1%. [B cell ALL-50.7%; T cell ALL-35.1% (*p*-value=0.084)]. With a median follow-up of 27 months in bcr abl-positive disease who received TKI (n=43), the one-year O.S was 68.5% and the one-year P.F.S was 66.3%.

Conclusions:

Outcomes of older adults with ALL in India remain dismal. Patients with Philadelphia positive B ALL receiving TKIs tend to do better. High rates of induction mortality, infections, attrition, and limited treatment options after relapse remain significant causes of morbidity and mortality in ALL treatments.

Disclosures No relevant conflicts of interest to declare.

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