

RISK FACTORS'IMPACT ON THE OVERALL SURVIVAL OF ACUTE LYMPHOBLASTIC LEUKEMIA ADULT PATIENTS IN FORTALEZA

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Acute Lymphoblastic Leukemia (ALL) is a hematological neoplasm characterized by clonal proliferation of lymphoblasts, being one of the most common types of leukemia in children and young adults, with a worse prognosis when manifested in adult patients. Despite advances in treatment, overall survival (OS) varies widely, influenced by several risk factors, such as cytogenetic characteristics, age, and disease subtype. This study seeks to analyze the impact of these factors on the overall survival of ALL patients, highlighting the importance of a personalized therapeutic approach to improve clinical outcomes. This retrospective study included 53 patients diagnosed with ALL treated at the Hospital Geral de Fortaleza (HGF), which is the largest oncohematology outpatient clinic in the state of Ceará. Patients were stratified according to the World Health Organization (WHO) guideline. The OS was assessed using Kaplan-Meier curves for each risk group and its' time was defined as the period from diagnosis to death or the last follow-up. Statistical analyses were performed to compare the survival curves between the different risk groups, using the log-rank test to determine statistical significance. Of the 53 analyzed patients, 45 had B-ALL (median age of 40 years) and 8 had T-ALL (median age of 28 years). In all, 23 patients were considered to have high-risk cytogenetic and 30 were over 35 years old. The analysis showed that patients without high-risk cytogenetics (20% in 40 months) had a significantly lower survival compared to those with high-risk cytogenetics (50% in 40 months). This may seem counterintuitive, as high-risk features are expected to be associated with a worse prognosis. Perhaps this is due to the fact that patients with high-risk cytogenetics can receive more intensive or innovative treatments, leading to a better initial response and, consequently, longer survival. Age proved to be an important prognostic factor, with older patients having significantly lower survival (25% in 40 months). This is consistent with the literature, where it is known that advanced age is a risk factor for a worse prognosis in ALL, due to factors such as higher rates of comorbidities and resistance to treatments. Overall, we observed that patients with T-ALL showed slightly better survival compared to patients with B-ALL, particularly in the first 10 months. This may be explained because T-ALL may have a more favorable initial response to chemotherapy treatment compared to B-ALL. This study's results underline the importance of a personalized approach in the ALL

treatment. It is evident that factors such as cytogenetics, age, and ALL subtype have a significant impact on patient overall survival. Stratification based on these factors can help in the selection of more appropriate treatments and in the definition of more accurate prognosis.

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CLINICAL CHARACTERISTICS AND PROGNOSIS OF ACUTE PROMYELOCYTIC LEUKEMIA PATIENTS IN FORTALEZA

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Acute Promyelocytic Leukemia (APL) is a specific and highly curable form of acute myeloid leukemia, characterized by the translocation t(15; 17) which results in the gene fusion PML::RARE. This fusion blocks the normal differentiation of promyelocytes, leading to the accumulation of immature cells. Typical treatment includes trans-retinoic acid (ATRA) and arsenic, which induce leukemic cell differentiation and result in high cure rates. This study aims to evaluate clinical and laboratory characteristics of patients with APL as well as investigate prognostic factors associated with survival. We analyzed data from 20 patients diagnosed with APL at the Hospital Geral de Fortaleza (HGF), which is the largest oncohematology outpatient clinic in the state of Ceará. Mann-Whitney tests were applied to evaluate the clinical data. Overall survival analysis was performed using the Kaplan-Meier method, stratifying patients by cytogenetic risk, according to the World Health Organization (WHO) and European LeukemiaNet (ELN) guidelines. Among the analyzed patients, the median age was 37.5 years (20-68 years). At the time of diagnosis, the patients had a mean hemoglobin count of 7.35 g/dL, White Blood Cell (WBC) Count above 10,000/mm³, and platelets below 50,000/mm³. The average percentage of blasts in the bone marrow was 86%. The mean overall survival of the patients studied was 8.18 months. The Kaplan-Meier analysis indicated that patients stratified as high-risk had a slightly higher probability of survival over time compared to low-risk patients. Overall survival over time was analyzed, showing a high overall survival probability for both groups. The data indicate that leukocyte and platelet counts are factors that demonstrated statistical significance among the groups studied, potentially influencing the prognosis of APL patients. Overall survival analysis suggests that risk stratification may be a useful tool in prognostic assessment and in defining treatment strategies. Additional studies with larger sample

sizes are needed to confirm these findings and explore other potential prognostic factors. Detailed characterization of APL patients and identification of prognostic factors are essential for optimizing treatment and improving survival rates. Leukocyte and platelet count proved to be a significant parameter in this study, highlighting the importance of continuous monitoring and risk stratification in the APL management.

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IMPACT OF HIGH-RISK CYTOGENETICS ON THE SURVIVAL OF NON-APL ACUTE MYELOID LEUKEMIA PATIENTS

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Acute myeloid leukemia (AML) is a hematologic malignancy characterized by the rapid proliferation of abnormal myeloid cells in the bone marrow and peripheral blood. Cytogenetics plays a crucial role in the risk stratification and prognosis of AML patients, according to the latest guidelines from the World Health Organization (WHO) and the European LeukemiaNet (ELN). This study aims to analyze the impact of high-risk cytogenetics on the survival of non-promyelocytic AML (non-APL) patients. In all, 93 non-APL AML patients were diagnosed between July 2021 and June 2024 at the Hospital Geral de Fortaleza (HGF), which is the largest oncohematology outpatient clinic in the state of Ceará. Survival data from non-APL AML patients were analyzed, stratified according to the presence or absence of high-risk cytogenetics, according to the guidelines. The analysis was performed using the Kaplan-Meier method, comparing two groups: patients with high-risk cytogenetics and patients without high-risk cytogenetics. Among the 93 patients, 47 were women and 46 were men, with a median age of 52.9 years (17-96 years). It was not possible to stratify all patients due to the lack of cytogenetic results. Among the available results, it was possible to stratify 15 patients with high-risk cytogenetic and 38 without high-risk cytogenetic. Herewith, a significant difference in the probability of survival was observed between the two groups over time, where the group with high-risk cytogenetics demonstrated a sharp drop in the probability of survival in the first 10 months, with a very low residual survival after this period, while the group that was not high-risk had a higher and more stable survival rate over time, with a probability of survival greater than 75% at 40 months. The results indicate that the presence of high-risk cytogenetics is associated with a significant worsening in overall survival of non-APL AML

patients. Patients with high-risk cytogenetics show a rapid and marked decrease in the probability of survival in the first 10 months after diagnosis, underscoring the need for more aggressive and personalized therapeutic strategies for this subgroup. This occurs similarly in the literature that points to adverse cytogenetic abnormalities, such as in acute myeloid leukemia and chronic lymphocytic leukemias. These findings reinforce the importance of cytogenetic stratification in the clinical AML management. Patients with high-risk cytogenetics have a worse survival, which warrants more intensive therapeutic interventions and close monitoring. Cytogenetics-based risk stratification should be standard practice in treatment assessment and planning.

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PANORAMA DA LEUCEMIA NA REGIÃO NORTE DO BRASIL: AVALIAÇÃO DE SÉRIES TEMPORAIS ENTRE 2013 E 2023

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Objetivo: Analisar os casos de leucemia na região Norte do Brasil. **Métodos:** Estudo descritivo com abordagem quantitativa, que utilizou dados do DATASUS do período de 2013 a 2023 da região Norte. Os casos selecionados foram aqueles sob o diagnóstico C91, C92, C93, C94 e C95, de acordo com a Classificação Internacional de Doenças. As variáveis coletadas foram o ano do diagnóstico, sexo e faixa etária. Posteriormente, realizou-se a análise por meio do Software Microsoft Excel® 2021. **Resultados:** Durante o período analisado, foram registrados 4.980 casos de leucemia, sendo 2.844 (57%) com leucemia linfóide (C91) e 1.996 (40%) com leucemia mieloide (C92). A média anual de casos da C91 foi de 259, que variaram nos períodos de 2013-2018 e 2019-2023, respectivamente, 178 para 356 casos/ano. O sexo masculino foi predominante, com 1.647 casos (58%), e a faixa etária de 0-19 anos, com 2.096 casos (74%). Enquanto, os casos da C92 se mantiveram estáveis com média de 181 casos/ano, com variações de 174 para 190 casos/ano entre os períodos de 2013-2018 e 2019-2023. Nesses casos, o sexo masculino também foi predominante, com 1.116 casos (56%), enquanto, a faixa etária foi de 40-59 anos com 621 casos (31%). Os outros 140 casos (3%) que representam as demais leucemias (C93, C94 e C95), mantiveram a predominância masculina, com 86 casos (61%), e a faixa etária de 0-19 anos, com 43 casos. **Discussão:** O número de casos destaca a C91 como principal causa de leucemia na região, seguida pela C92. Esses sendo os tipos mais comuns da doença, infelizmente, o banco de dados utilizado não contém informações sobre os subtipos, crônica ou aguda, o que limita uma análise mais elaborada. Em relação à distribuição desses casos no período analisado é possível observar um aumento expressivo a partir de 2019 nas leucemias linfóides, enquanto, as leucemias mielóides apresentaram um crescimento menos significativo. Esses dados fomentam algumas