Objectives: Acute lymphoblastic leukemia (ALL) is a heterogeneous disease characterized by altered clonal proliferation of lymphoid progenitor cells and their accumulation in the bone marrow (BM) and other organs. Precursor B-cell ALL (B-ALL) is the most common immunological subtype of ALL and the most frequent cancer in children. According to the World Health Organization, any disease classification must be periodically reviewed and updated, thus, there is a constant need for the characterization of new molecular biomarkers for diagnostic and prognostic purposes. This study aimed to compare microRNA (miRNA) expression profiles between bone marrow and peripheral blood samples and evaluate potential diagnostic biomarkers for childhood B-ALL. **Materials and methods:** Peripheral blood and bone marrow samples were collected from children with B-ALL admitted to the Onco-Hematology Service of the Joana de Gusmão Children's Hospital (HIJG), Florianópolis, Santa Catarina, as well as healthy controls. The samples were subjected to miRNA microarray analysis followed by RT-qPCR validation. **Results:** Microarray analysis revealed no differences in miRNA expression between peripheral blood and bone marrow samples from the same B-ALL patients. Comparison of peripheral blood profiles between B-ALL and control subjects revealed 13 differentially expressed miRNAs, and among these, five were selected as potential biomarkers for RT-qPCR validation based on their respective expression status. Additionally, nine miRNAs were included in the RT-qPCR validation based on literature findings. RT-qPCR analysis did not show significant differences between bone marrow and peripheral blood samples for 12 of the 14 miRNAs tested. Furthermore, it was found that one miRNA was downregulated and 10 were upregulated in B-ALL patients. Enriched pathway analysis of these differentially expressed miRNAs identified genes with important regulatory roles associated with cell cycle, proliferation, and apoptosis. **Discussion:** miRNA profile signatures have a high potential for cancer diagnosis, including that of childhood acute leukemia. In this study, we demonstrate important similarities between miRNA profile signatures of peripheral blood and bone marrow samples of children with B-ALL. Also, we demonstrated that some miRNAs are differentially expressed in leukemia patients when compared with healthy controls. Importantly, receiver operating characteristic analysis showed that all miRNAs significantly altered in B-ALL had high performance and could be used to distinguish patients from healthy subjects. **Conclusion:** Together, these data suggest an equivalence between peripheral blood and bone marrow miRNA expression profiles and demonstrate the potential of some miRNAs as B-ALL biomarkers.

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IMPACT OF THE COVID-19 PANDEMIC ON CHEMOTHERAPY/RADIOTHERAPY BURDEN FOR PATIENTS WITH ACUTE MYELOID LEUKEMIA IN BRAZIL, 2017-2023

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Objectives: To assess the chemotherapy (CT) and radiotherapy (RT) burden among Brazilian patients with Acute Myeloid Leukemia (AML) from 2017 to 2023. **Materials and methods:** This retrospective evaluation utilized data from the High Complexity Procedures Authorization (APAC) in Brazil, covering the period from January 2017 to the end of September 2023. Included patients were 18 years or older, with AML diagnosed according to the Therapeutic Diagnostic Guidelines of the Ministry of Health. Statistical analysis included descriptive indicators evaluated per patient per year (PPPY), along with corresponding 95% confidence intervals (CI). The comparison of PPPY before and after the pandemic was conducted using the z-test. All analyses were performed using Python 3.6.9. **Results:** A total of 12,466 patients were included in the study. PPPY rates were significantly higher in the post-pandemic period (14.77 [95% CI 14.76; 14.78] pre-pandemic vs. 16.26 [95% CI 16.24; 16.28] post-pandemic, $p < 0.001$). When comparing pre- and post-pandemic periods within Brazilian regions, no significant change in PPPY was observed for the Southeast, Midwest, and North. However, both the Northeast and South regions showed an increase in PPPY (Northeast: 14.41 [95% CI 14.38; 14.43] pre-pandemic vs. 17.01 [95% CI 15.00; 19.00] post-pandemic, $p < 0.001$; South: 15.10 [95% CI 14.77; 15.43] pre-pandemic vs. 16.89 [95% CI 16.49; 17.29], $p < 0.001$). **Discussion:** The post-pandemic increase in PPPY for RT/CT in AML patients can be attributed to several factors. Firstly, the pandemic led to a higher overall demand for healthcare, potentially resulting in increased RT/CT sessions. Additionally, oncology patients were considered a high-risk group during the pandemic, and treatment plans may have been adjusted due to changes in healthcare demands and quarantine guidelines, leading to increased treatment frequency after the pandemic. Notably, while the Southeast region of Brazil showed no significant changes, the Northeast and South regions experienced a general increase. One hypothesis is that the more robust healthcare infrastructure in the Southeast allowed for alternative solutions to prevent interruptions or excessive spacing between planned RT/CT sessions. **Conclusion:** Restricted access to healthcare systems during the pandemic and potential disease progression in AML patients inadequately monitored during the COVID-19 period are hypotheses explaining the increased post-pandemic demand for CT/RT. The Southeast region appears less affected by this phenomenon, while the impact is pronounced in the Northeast and South. Further studies are needed to better understand the pandemic's effect on healthcare resource utilization among AML patients.

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INTRAGENIC ANTIMICROBIAL PEPTIDE HS02 INCREASES THE EXPRESSION OF COMPONENTS INVOLVED IN PYROPTOSIS AND EXERTS ANTINEOPLASTIC EFFECTS IN HUMAN LEUKEMIA CELL LINES

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