EVALUATION OF THE LEUKOCYTE INDEX IN SICKLE CELL ANEMIA WITH THE USE OF HYDROXYUREA

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Objectives: The term sickle cell disease (SCD) is used to describe a group of genetic disorders in which there is a predominance of HbS, a variant hemoglobin originated from a single nucleotide polymorphism (SNP) responsible for the exchange of a glutamic acid by valine in position 6 of ß-globin chain. The most severe form of the disease is homozygous (HbSS). Thus, sickle cell disease patients may present different clinical manifestations and inflammatory processes. A pharmacotherapeutic used for the treatment is Hydroxyurea. The action of this drug includes increasing fetal hemoglobin levels and improving clinical severity and hematological parameters. This study aimed to investigate hematological stress in patients with sickle cell anemia treated (or not) with hydroxyurea, and classified regarding the risk of severity by the Calculator of severity of sickle cell disease. **Methodology:** DNA samples from 200 patients with sickle cell anemia, in steady state of the disease, using and not using hydroxyurea, were submitted to molecular analysis to confirm HbSS. Then, chronic stress was characterized from the neutrophil-lymphocyte ratio (NLR) through the analysis of the blood count and clinical history. NLR is an important inflammatory marker, its calculation is indicated for patients with sickle cell disease and values above one may indicate hematological stress. Statistical analyzes were performed using IBM SPSS Statistics 20 software. Data normality was verified using the Shapiro-Wilk test. Assessed for non-normality, the non-parametric Wilcoxon test was performed to compare the means between the leukocyte profile and the use of hydroxyurea. Then, a comparison was made between the risk of death of patients who were (or not) treated with hydroxyurea. The results were shown as mean and standard deviation, with a significance level of 0.05. **Results:** The means and standard deviation were NLR/With HU (1.76 ±1.53) and NLR/Without HU (1.65 ±1.07). In order to verify the difference between the means, we used the Wilcoxon test whose value was $p = 0.975$. Thus, we observed that there was no difference between leukocyte stress and the use of Hydroxyurea. When comparing the risk of death of patients which use the drug (1.96 ±0.73) and those who do not use it (2.22 ±0.75), we noticed that there were significant differences between the groups ($p = 0.01$). Therefore, the drug can contribute to reduce the risk of death. **Discussion:** The non-relation between leukocyte stress and the use of hydroxyurea reported in this study is not well documented in the literature. However, we observed an increase in NLR in critically ill patients with sickle cell disease classified by the Calculator of severity of sickle cell disease. The role of hydroxyurea in the risk of life for patients with sickle cell anemia is well documented. It is known that it can help reducing the number of hospitalizations, length of stay, less occurrence of acute chest syndrome, lower morbidity and mortality rate, contributing to an increase of up to 40% in patient survival. Our results corroborate literature data. **Conclusion:** There was no relationship between stress through the NLR and the use of hydroxyurea, but there is a relationship between the severity of the disease and the use of the medication. Relating leukocyte stress with disease severity as well as the impact of hydroxyurea on these indices is important to understand the clinical manifestations of sickle cell anemia patients.

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EXPRESSÃO DE MIR-199A-5P, MIR-144 E MIR-126 CIRCULANTES NA OCORRÊNCIA E RECORRÊNCIA DE ÚLCERA DE PERNA FALCIFORME

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A doença falciforme (DF) constitui um grupo de hemoglobinopatias caracterizado pela produção da hemoglobina S. A fisiopatologia da DF decorre de hemólise intravascular, destruição de hemácias, resultando em vasculopatia e manifestações clínicas, como as úlceras de perna que constituem lesões cutâneas em maléolos de membros inferiores. O advento das técnicas de biologia molecular possibilitou a identificação de microRNAs (miRNAs), pequenas moléculas de RNAs não-codificantes, que podem apresentar influência direta em diversas patologias, incluindo a DF. Entretanto, o papel de miRNAs na úlcera de perna falciforme ainda não é completamente compreendido. Desta forma, este estudo objetivou avaliar a expressão de três miRNAs (miR-199a-5p, miR-144 e miR-126) circulantes em associação à fisiopatologia da úlcera de perna falciforme. Estudo de corte transversal descritivo realizado no Centro de Referência a Doença Falciforme de Itabuna (CERDOFI), Bahia, no período de julho a novembro de 2019. Todos os pacientes incluídos nessa casuística estavam em estado estável, fora de terapia transfusional. Foram incluídos 65 pacientes com DF, sendo 52 pacientes sem úlcera de perna (UP-) e 13 pacientes com úlcera de perna ativa (UP+). A avaliação clínica das úlceras de perna foi realizada a partir da revisão de prontuários médicos no CERDOFI. Com devida aprovação do comitê de ética e após assinatura do termo de consentimento livre e esclarecido, foram coletados 15 mL de sangue periférico. A partir do soro e plasma foi realizada