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114.SICKLE CELL DISEASE, SICKLE CELL TRAIT AND OTHER HEMOGLOBINOPATHIES, EXCLUDING THALASSEMIAS: CLINICAL AND EPIDEMIOLOGICAL

Arginine Therapy Supplements Improves the LDH Level in Sickle Cell Patients in Steady States: Preliminary Results from Kinshasa, the Democratic Republic of Congo

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Aim: SCD is a congenital hemolytic anemia of autosomal recessive inheritance. The disease has the characteristics of a chronic inflammatory disease. Due to chronic sickling process by intracellular polymerization of red blood cell and precipitation of mutated sickle hemoglobin. It was recently well-established that arginase released from lysed RBCs consumes the eNOS substrate arginine, with a depletion of plasma arginine, the essential substrate for NO production by NO synthase, leading to acute and chronic complications. L-arginine was shown to significantly increase NO levels and decrease oxidative stress and lipid peroxidation, in recent studies. Despite high incidence of the disease in sub-Saharan Africa, there is still very little information on the benefits of arginine dietary supplement, in sickle cell patients.
Methods: We carried out a retrospective study to assess the benefit of arginine supplement on the level of LDH. The study group consisted of 31 patients who received 500 mg of Arginine per day for SCDs from 1 to 14 years old and 1000 mg per day from 15 years old. Three follow-up periods were defined: (i) before starting treatment with hydroxyurea (HU); (ii) a period of taking HU, greater than 3 months; (iii) a period of taking HU+ arginine supplement, greater than 3 months.
Results: The median age of this group was 12 years (range; 2 years-43 years). During the three periods of the study, the LDH value was above the norms, respectively 649,7 ± 364,2 U/L in period 1, 661,6 ± 367 U/L in period 2, and 529,9± 346,3 U/L in period 3. By comparing the different periods of the study, There is a significant increase (p=0.4589; Kruskal Wallis test) in the mean LDH value in the period 2 compared to the period 1. There is a significant decrease in the mean LDH value in period 3 compared to period 1, and period 2 (p= 0,4589, Kruskal Wallis test).
Conclusion: This study found that the sickle cell patients who received arginine supplements with HU decreased significantly the level of LDH. However, the present study had some limitations. These include its hospital-based retrospective design limiting the potential to make conclusions. On the other hand, further investigations including a large sample in a prospective study with a control group and other biological parameters data will be interesting in our midst.

Disclosures No relevant conflicts of interest to declare.

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