OXIDATIVE STRESS IS ASSOCIATED WITH DISEASE ACTIVITY IN THE SYSTEMIC LUPUS ERYTHEMATOSUS

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Introduction and objectives: Systemic lupus erythematosus (SLE) is a multisystemic autoimmune disease that evolves interspersed periods of activity and remission. Oxidative stress is involved in the development and pathogenesis of this illness. This work aimed to analyze some oxidative stress markers in serum, plasma and urine of SLE patients from University Hospital Antônio Pedro/UFF (HUAP).

Materials and Methods: Cross sectional study was conducted with 47 patients classified with active (SLEDAI ≥ 6) and inactive (SLEDAI < 6) disease, compared to 22 healthy individuals. Nitric oxide (NO), superoxide dismutase enzyme (SOD), reduced (GSH) and oxidized (GSSG) glutathione were quantified by Griess reaction, by a sandwich-type enzyme immunoassay and by a colorimetric assay, respectively. Results and Conclusions: SLE patients had long-term duration of disease and female prevalence (98%). 64% patients had signs of active disease, the majority with low activity. There was a decrease of GSH in plasma and urinary samples (1.87 ± 0.88 vs 2.62 ± 0.68 mM, p = 0.0002; 5.45 ± 2.42 vs 7.15 ± 3.25 mM, p = 0.038) and decreased serum SOD concentrations in SLE patients (27.40 ± 9.02 ng/mL, p = 0.018) when compared with control (31.97 ± 7.35 ng/mL). There were a negative correlation of the GSH and anti-dsDNA levels (rs = -0.381, p = 0.018), a positive correlation between glomerular filtration rates and GSH (rs = 0.429, p = 0.003) and negative correlation with NO (rs = -0.370, p = 0.011). SLE patients treated at HUAP have long time duration of disease and relevant clinical and laboratory alterations, but with low intensity activity. SOD and GSH showed low anti-oxidant potential of the system. This results suggests that these molecules can be useful tools in the identification of renal dysfunction.

Acknowledgements: Pós-graduação em Patologia/UFF, FAPERJ, CNPq.

Keywords: Systemic Lupus Erythematosus, Oxidative Stress, disease activity.