OXIDATIVE STRESS IS RELATED TO PAIN SCORES AND QUALITY OF LIFE IN PATIENTS WITH CHRONIC PAIN

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INTRODUCTION: Oxidative stress (OS) is characterized by an imbalance between oxidant and antioxidant compounds, which can lead to the activation of transcription factors regulated through redox-sensitive mechanisms; and enzymes such as SOD and GPx act to attenuate it. These sources help neutralize the harmful effects of reactive oxygen species (ROS). However, in certain conditions, such as chronic pain and exposure to xenobiotics, ROS production can exceed antioxidant capacity, leading to OS. AIM: To evaluate the correlation of OS parameters with pain scores and quality of life (QL) in patients with chronic pain. MATERIALS AND METHODS: Sixty-five patients with chronic pain (55 women; age: 60,0 ± 12,2 years old) were evaluated. OS parameters were evaluated by superoxide dismutase (SOD) and glutathione peroxidase (GPx) activities and total antioxidant power (FRAP). Pain index was assessed using the Brief Pain Inventory and QL was assessed using the WHOQOL-BREF questionnaire. The Spearman correlation was used to evaluate the relationship between the parameters analyzed. RESULTS: All patients were receiving pharmacological treatment for chronic pain. The drugs gabapentin, pregabalin, amitriptyline and duloxetine were used to treat pain in these patients. There were negative correlations with the SOD activity and pains scores [pain at the time of the interview (r=-0,402; P=0,004); pain interference in the last 24 hours in general activity (r=-0,309; P= 0,006) and humor (r=-0,381; P=0,006)] and a positive correlation between SOD activity and intensity of improvement provided by drug treatment (r=0,418; P=0,003). The GPx activity was negatively correlated with pain scores [worse (r=-0,301; P=0,034) and average pain (r=-0,387; P=0,006) in the last 24 hours; pain interference in the last 24 hours in sleep (r=-0,286; P=0,044) and relationship with people (r=-0,341; P=0,016)]. On the other hand, the SOD activity was related to physicist domain of WHOQOL (r=0,336; P=0,017) and overall QL (r=0,365; P=0,009). The GPx activity was related to physicist (r=0,315; P=0,026), psychological (r=0,371; P=0,008) and social (r=0,368; P=0,009) domains and with overall QL (r=0,284; P=0,045). CONCLUSION: Patients with greater pain intensity have lower activity of antioxidant enzymes (SOD and GPx), which is reflected in their quality of life.

Key words: chronic pain; oxidative stress; pain scores; quality of life.

Financial support: Feevale, CNPq and FAPERGS.