

ASSOCIATION BETWEEN PERIAPICAL LESIONS AND MYOCARDIUM FUNCTION IN HYPERTENSION CONDITIONS

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The study was labeled to investigate the possible association between periapical lesions (PA) and myocardium function in hypertensive rats.

Forty-eight normotensive Wistar albino and spontaneously hypertensive rats were divided into four groups: control (C), normotensive with PA (PA), spontaneously hypertensive (SHR), and SHR with PA (SHR+PA). PA has been induced on the first right molar lower jaw by exposing the pulp to the oral environment for 4 weeks. The animals were sacrificed by cervical dislocation, whilst hearts were isolated and perfused according to the Langendorff technique. Biomarkers of oxidative stress were determined in myocardium tissue homogenate. The hemimandibles were analyzed pathohistologically. The PA extension of inflammatory infiltrate was significantly higher in the SHR+AP compared to the AP group ($p < 0.01$). The levels of the maximum left ventricular pressure development rate of the SHR+AP group were significantly higher compared to the AP and C groups, and of the SHR group compared with the C group ($p < 0.05$). The levels of the minimum left ventricular pressure development rate of the SHR + AP group were significantly lower compared to the AP, SHR, and C groups, and of the SHR group compared to the C group ($p < 0.05$). The activities of SOD in the homogenate of heart tissue were significantly lower in the PA group in comparison with the C group ($p < 0.05$).

PA was associated with impaired cardiodynamics and disturbed cardiac oxidative stress in hypertensive conditions. Hypertension was correlated with increased PA inflammatory infiltrate extension compared with normotensive conditions.

Keywords: Periapical lesions, Hypertension; Oxidative stress, Isolated rat heart.