

Alterations of type I and III collagens in the papillary muscles of infarcted rats

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The objective of this study is quantitatively analyze type I and III collagens in the papillary muscles of infarcted rats comparing them with a control group and carry out a immunohistochemical approach to assess the presence of types I and III collagens in the infarction scar region and in the rest of the myocardium. This study used 12 rats divided into two groups: infarcted and non-infarcted. After six weeks, the rats of both groups were killed in order to remove the anterior and posterior papillary muscles of the left ventricle. The material was observed under a light microscope, with polarization, to quantify, in percentage, types I and III collagens; one of the infarcted hearts was also randomly selected to undergo an immunohistochemical analysis to identify the presence of these collagens in the post-infarction scar region and in the remaining myocardium. The anterior papillary muscles of the infarcted group presented a higher collagen concentration when compared with the control group; the means were found to be between 5.4 and 0.4% respectively. In posterior papillary muscle analysis, the mean for the infarcted group was 3.2 and 0.5% for the control group. Myocardial infarction leads to an increase in the concentrations of types I and III collagens in the anterior and posterior papillary muscles. Immunohistochemistry showed the presence of types I and III collagens in the infarction scar region and a lower amount of these same collagens in the rest of the myocardium.