CONSUMPTION OF WHITE WINE DECREASES EXPRESSION OF INFLAMMATORY MARKERS FOLLOWING MYOCARDIAL INFARCTION IN RATS

Ključević N., Režić Mužinić N., Mastelić A., Markotić A., Mudnić I., Grga M., Milat AM., Boban M., Grković I.

University of Split School of Medicine, Šoltanska 2, HR-21000 Split, Croatia

nikola.kljucevic@mefst.hr

Introduction: The aim of our study was to investigate the effect of white wine consumption on the expression of early inflammatory markers (MMP-2, MMP-9, NF-κB) in the myocardial tissue following experimentally induced permanent myocardial ischemia.

Materials and methods: Male Sprague-dawley rats (n=10) were randomized into two groups: drinking a combination of wine and water and those drinking water only for 28 days. After performing the coronary ligation, animals were left to survive for 24 hours and then sacrificed. Three representative zones for each group of animals: infarct/ischemic, peri-infarct/border zone and control/nonischemic zones were analysed for the expression of immunoreactivity for the above markers. The threshold area % of signal density for each marker was measured and compared.

Results: For MMP-9, a significantly smaller expression was found in all three zones of wine drinking animals group ($p<0.001$). A significant decrease of NF-κB signal was found in the peri- infarct zone of wine-drinking animals when compared with water-drinking group ($p<0.001$). There was no difference in MMP-2 immunoreactivity between two groups, except in the peri-infarct zones, where again a significant decrease of the signal ($p<0.001$) was found. Collectively, a significant decrease of the signal was found for all three markers in the white wine group, with the most prominent attenuation of signal for the MMP-2.

Conclusions: White wine consumption significantly decreases expression of inflammatory markers in the peri-infarct zone suggesting not only its preconditioning potential but also strong (inflammation-related) modulatory effect.

Supported by Croatian Science Foundation project No. 8652