

Pavlovschi E.

SERUM AND TEAR MALONDIALDEHYDE LEVEL AS A POTENTIAL STRESS MARKER IN HYPERTENSIVE RETINOPATHYNicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, Moldova
Department of Biochemistry and Clinical Biochemistry
(scientific advisor - Ph.D. Tagadiuc O.)

Hypertensive retinopathy (HR) is a complex and multifactorial disease. Currently, multiple pathological molecular mechanisms of the condition are under discussion, including oxidative stress (OS). The aim of the study was to analyse the changes in the serum and tear malondialdehyde (MDA) levels - known as the marker of lipid's oxidative damage in OS and to ascertain whether there is a correlation between them and the grade of HR. The study was approved by The Research Ethics Committee (12.02.2018).

The study included 90 hypertensive patients that were diagnosed for the first time with HR, distributed according to the Keith-Wagener-Barker grading system of HR into GI - 36 patients with grade I HR, GII - 35 patients with grade II HR and GIII - 19 patients with grade III HR. Written informed consent was signed before inclusion in the research. At the time of samples collection, the patients were not on any antihypertensive or other drug that can interfere with the results of the study. In addition, were excluded from the study the patients with metabolic disorders, serious somatic comorbidities, optic nerve atrophies of different genesis and ocular associated diseases. MDA level was measured by Atasayar S. et al. procedure in the modification of Gudumac V. et al. and expressed as mean \pm SD. The obtained data were processed using SPSS 23.0 Software. Analysis of variance (ANOVA) was used, followed by the Bonferroni post hoc test. $p < 0.05$ was considered statistically significant.

In serum was determined a noticeable tendency of MDA level enhance during the advancement of HR in grade. In the tear, the MDA level presented insignificant statistical changes, but with a tendency to increase in GII, followed by a decrease in GIII. Neither tear, nor serum MDA levels correlate with the grade of HR ($p = 0.338$ / $p = 0.408$), but correlate with low power with each other ($r = 0.277$, $p = 0.008$).

The HR evolution is not correlated with either enhanced MDA serum or ultimate decrease in tear level. Further studies that analyze samples from both serum and tear are needed to confirm our findings in proving the role of OS in HR.