عنوان مقاله:

The Study of Serum Asymmetric Dimethylarginine Concentrations in the Different Paraoxonase Phenotypes of Exudative Age-related Macular Degeneration Disease

محل انتشار:

مجله بین المللی آزمایشگاه پزشکی, دوره 7, شماره 4 (سال: 1399)

تعداد صفحات اصل مقاله: 12

نویسندگان:

امیر قربانی حقجو - *Drug Applied Research Center, Tabriz University of Medical Sciences, Tabriz, Iran*

شهین علیزاده - *Department of Biochemistry, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran*

نوید فرهمندی - *Department of Biochemistry, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran*

الهام بحرینی - *Department of Biochemistry, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran*

خلاصه مقاله:

Background and Aims: Age-related macular degeneration (ARMD) is a degenerative retinal disorder that causes progressive loss of central vision in older adults. The study aimed to determine the effect of asymmetric dimethylarginine (ADMA) as oxidizing metabolite and paraoxonase (PON۱) activity within its phenotypes as an antioxidant agent in the development of such multifactorial disease. Materials and methods: Forty-five exudative ARMD (E-ARMD) patients and ۴۵ healthy controls were enrolled for this case-control study. Serum PON۱ activity was measured using paraoxon and phenylacetate as substrates. PON۱ phenotype was determined using the double-substrate method. The ADMA and oxidized LDL (OX-LDL) levels were determined by enzyme-linked immunosorbent assay method. Blood lipid profile was measured, and nontraditional lipid indexes were calculated. Results: Three phenotypes were determined for PON۱ among the participants in the study, including AA, AB, and BB phenotypes with low, moderate, and high activity, respectively. AA phenotype was more frequent among E-ARMD, while AB and BB phenotypes were more common among healthy subjects. The mean ADMA and OX-LDL levels were significantly higher in the patients comparing to the controls (p=۰.۰۲ and p=۰.۰۱, respectively). No significant differences were found in ADMA and OX-LDL levels between phenotypes in each group and also among similar phenotypes. LDL, cholesterol, and even all comprehensive lipid indexes except (atherogenic index of plasma) were higher in E-ARMD patients compared with the healthy group. Conclusions: It was concluded that high-risk individuals could be identified by evaluating the blood factors involved in oxidative stress, and antioxidant therapies may reduce the incidence and progression of the disease.

کلمات کلیدی:

Asymmetric Dimethylarginine, Macular degeneration, Oxidized LDL, Paraoxonase