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**OXIDATIVE STRESS AMONG THE MIDDLE AGED AND ELDERLY POPULATION: A COMPARATIVE STUDY**

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**ABSTRACT**

Background: Ageing and death has been described as a result of interplay between several programmed or non-programmed factors. Mitochondrial DNA damage increases with advancement of age resulting increased Reactive oxygen species production and oxidative stress. Other than DNA oxidative stress affects the membrane of the cell and intracellular organelle. by alteration of membrane proteins and lipids. Cumulative effects of protein, lipid and DNA damage with progression of age might be a major cause of ageing of a living organism.

Methods: A total 72 study participants were distributed equally in two groups depending on their age. The groups were A (35-55 Yrs.) and B (>60 Yrs.) with 36 participants in each group. Serum thiobarbituric acid reactive substances, Protein Carbonyl, Superoxide dismutase and α-tocopherol were measured in 12 hrs fasting venous blood sample of both the groups.

Results: Thiobarbituric acid reactive substances and Protein Carbonyl were found to be significantly increased among the elderly age group (*p* < 0.001). On the other hand, α-tocopherol (*p* < 0.001) and Superoxide dismutase (*p* < 0.05) were significantly decreased in the elderly study group. When all 72 participants in both group were considered together, it was found that TBARS and Protein carbonyl were found significant positive correlation with age (*r* = 0.90, *p* < 0.01) and (*r* = 0.44, *p* < 0.01) respectively. On the other hand α-tocopherol and SOD were found to have significant negative correlation with age (*r* = -0.88, *p* < 0.01) and (*r* = -0.27, *p* < 0.05) respectively.

Conclusion: Elderly population experiences more oxidative stress compared to their middle aged counterparts.

Keywords: Oxidative stress; protein Carbonyl; superoxide dismutase; thiobarbituric acid reactive substances; α-tocopherol