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The effect of meclofenoxate with ginkgo biloba extract or zinc on lipid peroxide, some free radical scavengers and the cardiovascular system of aged rats.

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Aged rats are highly prone to many physiological changes such as blood pressure and heart rate. These changes could be due to modification in membrane phospholipid composition of their blood vessels. Lipid peroxide in vivo has been identified as a basic deteriorative reaction in cellular mechanisms of aging in human. The effect of a nootropic drug, meclofenoxate (MF) or its combination with extract of ginkgo biloba (EGb-761) or zinc (Zn) on malondialdehyde (MDA)
product as an index of endogenous lipid peroxidation; phospholipid; glutathione (GSH) and protein thiols (PrSHs) contents as well as superoxide dismutase (SOD) activity in blood, brain, heart and liver of 24-month-old male rats was investigated. Aged rats were treated with MF once daily at oral doses of 100 mg kg-1 body wt. alone or with either EGb at a dose of 150 mg kg-1 body wt. or Zn at 10.5 mg kg-1 body wt. for 4 weeks. This study showed that aging caused a higher increment in MDA level of brain and heart than liver and plasma accompanied with reduction in brain and heart phospholipid contents as well as alteration of the antioxidant systems as compared to 4-month-old rats. Treatment of aged rats with MF alone or combined with either EGb or Zn caused improvement in the measured free radical scavengers especially in brain and heart tissues. Our results also showed that both EGb and Zn induced a significant potential effect of MF action on blood pressure and heart rate. The results were explained in the light of the antioxidant properties of EGb and Zn. Thus it is concluded that EGb and Zn have a beneficial role with MF in diminishing cumulative oxidative changes in aging.