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Appraisal of Oxidative Stress in Pregnant and Non-Pregnant Non Descript Goat from Arid Tracts in India

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Abstract : Assessment of antioxidant status is an effective tool to appraise the presence of oxidative stress. A combination of assays can be used to evaluate the antioxidant status like serum catalase (CAT), superoxide dismutase (SOD) and monoamine oxidase (MAO). In human medicine pregnancy is known to be associated with oxidative stress. Oxidative stress produces harmful effects to the developing foetus. Several metabolic changes occur in the maternal body to meet the demand of energy of developing foetus. Due to these changes susceptibility of maternal body increases to oxidative stress. There is paucity of research work on this aspect in nondescript goats. Therefore, the present study was intended to appraise the oxidative stress in pregnant and non-pregnant non-descript goat. Blood samples were collected for serum separation in otherwise healthy pregnant and non-pregnant nondescript goats. Mean values of serum CAT, SOD and MAO were found on a higher side ($p \leq 0.05$) with serum SOD values showing a rise of 2.5 times higher than the control healthy value. Correlations among all the three parameters were found to be highly significant ($p \leq 0.01$) especially greatest in youngest group of pregnant animals. Illustration of result enlightened the veracity of bumped up production of free radicals in pregnant animals. Technical savoir-faire of oxidative stress supervision is essential for upholding of health status of foetus. The upshot of present study undoubtedly implied the development of oxidative stress in pregnant goats on the basis of altered antioxidant status. These findings conclude that initially the oxidative stress due to pregnancy is critically combated by the intricate defensive mechanism of natural antioxidant system of the body. It appears that this imbalance between oxidant and antioxidant must be checked in time to prevent cellular damage by regularly appraising the antioxidant status through laboratory methods.

Keywords : antioxidant, oxidative stress, pregnancy, serum catalase
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