**Title:** Testosterone /estradiol ratio , DHEA-S level and correlation with coronary inflammatory markers

**Category:** Prevention

**Abstract**

Background: Previous data showed the adrenal sex hormone dehydroepiandrosterone (DHEA) which is present in serum mainly as the sulfate DHEA-S is the most abundant steroid hormone and another hormones like testosterone , estradiol are related to cardiovascular risk in men. Literatures revealed vascular and metabolic actions of DHEA/-S, evidence for an association between DHEA/-S levels and cardiovascular events is controversy.

Objectives: Our aim is to review and clear the contradictory point regarding cardiovascular risk and correlation of testosterone/ estradiol ratio, DHEA-S level with coronary inflammatory markers in men.

Methods: Large population based cohort study done at multi centre of cardiology from 2013- 2018 in India. We enrolled total 23631 normal healthy male population age between 40 to 60 years and divided into two groups based on testosterone/estradiol ratio ( Group-A (n=2450) lower value of T/E ratio and Group-B (n=21181) normal or higher T/E ratio. We did cohort analysis for 5 years and evaluated DHEA-S level and correlated it with coronary inflammatory markers and cardiovascular risk.

Results: In group –A ( low T/E ratio) we found low level of DHEA-S (98% of individual) and higher value of interleukins IL-1(68%),IL-6(74%) and tumor necrosis factor TNF-1 (71%) and high sensitive C-reactive protein(hsCRP)(73% of individual). Data revealed two fold increase of high blood pressure and LDL cholesterol level as compared to group B( normal or high T/E ratio and normal or high value of DHEA-S). 2.5 fold higher rate of coronary heart disease(CHD) found in group A versus in group B. We did not found as much significant difference in stroke, carotid and peripheral artery disease. T/E ratio and DHEA-S levels were inversely associated with the age-adjusted risk of a CHD event; the hazard ratios and 95% confidence intervals per standard deviation (SD) increase were 0.76 (0.66 to 0.91) and 0.82 (0.72 to 0.93), respectively.

Conclusions: Decrease ratio of testosterone/estradiol levels correlate decreased levels of DHEA-S which may increase the risk of CHD in men. For future aspect, correction of T/E ratio , DHEA-S and increase its awareness should be at mass level for prevention of CHD.