

Possible interactions of adrenal hormones and metabolic factors in prehypertension stage

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Background and Aims: Hypertension is a common, multifactorial disorder, involving large percentage of population in both developed and underdeveloped countries. Despite intensive researches being carried out the world over, its cause cannot be ascertained in more than 90% cases.

The aim of this study was to assess the correlation of adrenal hormones cortisol and aldosterone with some known metabolic risk factors, affecting blood pressure and causing progression of prehypertension stage into hypertension stage-I

Methods and Results: 276 subjects were recruited (aged 25 – 65 years) in this casecontrol study, classified into three categories; prehypertension (pre-HTN), hypertension (HTN) Stage I and II, according to 7th JNC report and compared with age-matched normotensive control subjects.

Serum cortisol, aldosterone, electrolytes (sodium & potassium), total cholesterol, LDL and fasting blood glucose were estimated. Height, weight, waist circumference, Systolic and diastolic blood pressures were recorded

The Mean aldosterone level was within high normal range and statistically significant in HTN stage I & II. It had positive correlation with total cholesterol and LDL in pre-HTN stage-I. The cortisol level was significantly correlated to BMI, Na⁺, K⁺ in control group, & to BMI & WC in pre-HTN group, showing its association with obesity.

Conclusion: The sequence of pathophysiological processes leading to hypertension is suggested to be initiated by visceral fat accumulation, in normotensive subjects. This is associated with dyslipidemia, hyperglycemia, salt sensitivity, secretion of aldosterone, all leading to endothelial dysfunction, ultimately resulting in hypertension

Biography

- Dr. Sadiqa Syed completed her MBBS from Dow Medical College, Karachi, Pakistan in the year 1985 and PhD in Physiology from University of Karachi, Pakistan in the year 2011. Currently, working as Professor and Head of the Department of Physiology, Bahria University Medical and Dental College, Karachi, since December 2008 till date. About 20 articles of her research were published and participated in many seminars in Pakistan.