Intensive lifestyle modification for cad reversal successfully reduces circulatin...

Introduction The incidence of cardiovascular risk factors in the form of diabetes, obesity, dyslipidaemia and hypertension are often considered as the metabolic syndrome. It is reported that almost 29 percent of global deaths occurring is from the Cardio vascular diseases with majority of causalities being reported from the low and middle income countries (WHO,). It is also predicted that the heart ailments and stroke would be the major causes of death and disability that would result in more than 24 million fatalities in an year by 2030 (WHO, 2004). The proportion of the deaths reported from United States due to Coronary vascular disease is also 30 and this is reported maximum for the age groups above 65 (United States, 2006) Among various pathogenic factors, insulin resistance and visceral obesity are considered most significant. (Duvnjak and Duvnjak, 19- 24) . The observed metabolic abnormalities are due to insulin resistance in muscles and surrounding adipose tissue along with the adverse impact on tissue by compensatory hyperinsulinaemia, which is insulin sensitive (Duvnjak and Duvnjak, 19- 24). In addition, abdominal adiposity is also considered a high risk for cardio vascular diseases (CVD). Also, the increasing obesity is found to decrease adiponectin that has important cardiometabolic actions (Bray et al, 30-40). Significant breakthroughs have also been achieved in understanding the key initiators for coronary artery disease. The initiation and progression of atherosclerosis has been found to be associated with leptin. Studies have also shown that plasma leptin concentration has direct relation to the incidence of coronory artery disease and thus could be used as a risk indicator for the development of the disease (Dubey et al, 124 - 128).

. It is clear that the role played by obesity in the cardiometabolic risk is very vital for the development of treatment strategies for the patients with a high risk for cardio vascular diseases (CVD). A critical role played by adipocytokines between insulin resistance and cardiovascular disease has been established. It is also anticipated that effective interventions to improve the functions of endothelial or adipose tissues could significantly reduce the occurrence of cardiovascular events in the obese individuals with metabolic syndrome (Hamdy, 231 - 241). One of the effective ways to treat the people with high cardiovascular risk is through the various lifestyle modifications like restricted calorie intake and increased physical activity (Hamdy, 231-241). The impact of exercise on the controlling the risk factors for the cardiovascular diseases have been reported. it has been shown that the low density lipoprotein , cortinsol and leptin levels can be significantly lowered following rigorous exercise sessions. (Karacabey, 1472-1478). Also add a sentence or two on drugs that can be used to lower leptin and insulin levels.

Modifications to the lifestyle are often proposed as necessary criteria for the reduction in the probability of incidence of cardiovascular diseases. But these approaches have not been accepted well by the scientific community due to the absence of adequate information on the long-term effects of the metabolic hormones. The study proposed here investigates the impact of intensive risk factor modification program on insulin and leptin serum level based on the measurements taken at baseline, 12 weeks and 1 year. Thus the specific objective is to assess the changes in physiological risk factors for CAD based on a one year healthy lifestyle intervention. In addition, the

relative effect of the changes in insulin / leptin level and corresponding improvement in vascular health is also investigated. Finally, the benefits of cardiovascular risk reduction programs are also evaluated.

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