



Modulation of Impact of Obesity in Pathological and Physiological Cardiac Hypertrophy by Orlistat

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SUMMARY. High fat diet (30 % fat) was used to induce obesity in rats. Male wistar rats were kept at high fat diet for 90 days and subjected to partial abdominal aortic constriction (PAAC) at 62nd day and continued upto 90th day. Similarly rats were kept at high fat diet for 90 days and subjected to chronic swimming training (CST) at 46th day and continued upto 90th day. Obesity was assessed by measuring body weight, WHR ratio, obesity index and adiposity index. Cardiac hypertrophy was assessed by measuring left ventricular weight, left ventricular weight to body weight, left ventricular wall thickness, cardiomyocyte diameter, left ventricular protein content and left ventricular collagen content. Mean arterial blood pressure (MABP) was also recorded. Oxidative stress was assessed in terms of thiobarbituric acid reactive species (TBARS) level, superoxide anion generation level and reduced glutathione level in left ventricular tissue. Obesity, cardiac hypertrophy and oxidative stress were increased in high fat diet groups. Orlistat, lipase inhibitor, significantly attenuated the impact of obesity in experimental cardiac hypertrophy. Furthermore orlistat significantly attenuated the oxidative stress. So it can be concluded that by decreasing the impact of obesity, orlistat significantly attenuated the extent of cardiac hypertrophy.

KEY WORDS: Cardiac hypertrophy, Obesity, Orlistat, Oxidative stress.

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