

Co-existence of Fatty Acids changes in Aorta Artery and Adipose Tissue; Comparison between CAD and non CAD Patients

Gholamreza Bahrami, *^{1,2}; Maasomali Masoumi,³; Zoherh Rahimi,¹;

¹ Medical Biology Research Center, Medical School, Kermanshah University of Medical Sciences, Kermanshah, Iran

² School of Pharmacy, Kermanshah University of Medical Sciences, Kermanshah, Iran

³ Imam Ali hospital, School of Medicine, Kermanshah University of Medical Sciences, Kermanshah, Iran

Abstract

Background: This study was aimed to evaluate composition and possible co-existence of change in fatty acids of aorta artery and adipose tissue in two groups of patients with different degree of atherosclerosis.

Methods: Twenty one angiographically documented coronary artery diseases (CAD) patients, and the same numbers of age, sex and body mass index –matched angiographically documented non CAD patients enrolled in this study. They were operated electively for coronary artery bypass grafting (CABG) or aortic valve replacement surgery (AVR), respectively. Small segments of ascending aorta artery and adipose tissue were dissected from the two groups during open heart surgery and subjected to fatty acid analysis.

Results: The results showed that in the CAD group, amounts of saturated and $\omega 6$ fatty acids were higher, while the percent of monounsaturated and $\omega 3$ fatty acids were lower than the non CAD patients for both aorta artery and adipose tissue samples. A moderate correlation was seen between amounts of fatty acids in adipose tissue and aorta artery.

Conclusion: As there are many reports which show that adipose tissue can only be used as a suitable indicator of dietary intake of exogenous fatty acids (e.g. polyunsaturated and trans fatty acids), our study suggests that modification of fatty acids with endogenous synthesis and metabolism (e.g. saturated and monounsaturated fatty acids) which were observed in both adipose tissue and aorta artery of CAD patients, may be produced during atherogenesis.