

Dysfunctional vascular phenotypes in human visceral fat

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Abstract

Obesity has emerged as one of the most critical health care problems in the US and worldwide with nearly 70% of the US population is currently overweight or obese. Obesity is closely linked to the development of type 2 diabetes and cardiovascular disease, and these associations are strongest with the degree of visceral fat accumulation. Recently published work from our laboratory demonstrated that arteriolar vasodilator endothelial function of vessels intrinsic to visceral fat depots is severely impaired in obesity. In the current abstract, we will present data demonstrating that angiogenic functions of blood vessels in visceral fat are also impaired. Impaired angiogenesis in fat has been implicated in the development of adipose tissue hypoxia, capillary rarefaction, inflammation, and metabolic dysregulation, but mechanisms remain unknown. We will provide data demonstrating up-regulation of novel anti-angiogenic factor that is over-expressed in human visceral fat that may play a key pathogenic role in human adiposopathy. Importantly, we will present data demonstrating systemic up-regulation of the circulating anti-angiogenic factor that may impair vascular remodeling, and support pathological vascular changes in multiple organ systems, including coronary and peripheral circulations, thus contributing to mechanisms of obesity-related cardiovascular disease.

Biography

Noyan Gokce, MD is cardiologist and Associate Professor of Medicine, Director of Echocardiography at Boston University Medical Center. He received his MD degree from Tufts University School of Medicine, Boston in 1992, completed residency training at Beth Israel Hospital, Boston in 1995, followed by Cardiovascular Fellowship at Boston Medical Center, Boston where he has served as attending cardiologist since 1998. Dr. Gokce is the recipient of NIH R01 grant awards studying cardiovascular effects of obesity. He has published > 60 papers in peer reviewed journals and is currently an editorial board member for the journal *Circulation: Cardiovascular Imaging*. Dr. Gokce was recently inducted into the American Society for Clinical Investigation (ASCI).