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Visceral obesity, adiponectin and atherosclerosis

Although cholesterol, especially LDL-cholesterol has been considered to be a major risk factor of atherosclerosis and cholesterol lowering drugs such as statins has been valued highly for the prevention of cardiovascular disease in the clinical field of all over the world, residual risks such as non-cholesterol dyslipidemia, diabetes mellitus and hypertension, especially clustering of these risks has been also known to contribute to the occurrence of cardiovascular disease. Many epidemiological studies has revealed that obesity, especially visceral obesity may induce the development of diabetes mellitus, hypertension and dyslipidemia and the clustering of these risks may become strong risks of cardiovascular disease. In this lecture, I will show an important role of visceral fat accumulation in the development of a variety of obesity-related disease including cardiovascular disease based on our clinical studies using CT scan and also discuss the mechanism of these disorders by focusing on adipocytokines, adipose tissue-derived bioactive substances especially, adiponectin which was discovered from human adipose tissue by our group in 1995. Adiponectin is a unique collagen-like protein which has anti-diabetic, anti-atherogenic function as well as anti-inflammatory function. I would like to show that hypo adiponectinemia caused by visceral fat accumulation is a key mechanism of a variety of obesity-related diseases such as DM, hypertension and lipid disorders and also directly cardiovascular disease.

Biography

Yuji Matsuzawa has completed his graduation from Osaka University Medical School in 1966 and joined a research group of Lipid Research Laboratory at Osaka University in 1969. He became Professor of the second Department of Internal Medicine of Osaka University in 1991, until 2003 when he moved to Sumitomo Hospital as Director and Emeritus Professor of Osaka University. He has long worked on hyperlipidemia and obesity. He has discovered several novel disease entities such as "Autoimmune hyperchylomicroemia" and "Hyper HDL cholesterolemia caused by CETP deficiency". He was also interested in body fat distribution with respect to morbidity. He developed the method for fat analysis using CT scan and established the concept named visceral fat syndrome in which cardiovascular risks cluster by visceral fat accumulation. He also investigated biological characteristics of adipose tissue and found that adipose tissue abundantly expressed bioactive substances. During these works, he discovered "adiponectin", which may be one of key players in the mechanism of obesity-related diseases. He is currently the President of International Atherosclerosis Society.

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