Obesity-associated cancer: Mechanistics and translational insights

José Barreto Campello Carvalheira
Division of Oncology, Faculty of Medical Sciences, State University of Campinas – UNICAMP, Campinas, SP, Brazil

Obesity is a leading preventable cause of cancer that also negatively impacts on cancer prognosis. Mechanistically, obesity is associated with hyperinsulinemia, which is mainly promoted by adipose tissue mediated low-grade chronic inflammatory state. At the same time, carcinogenesis is greatly affected by both inflammation and increased activity of growth factors, including insulin and IGF-1 receptors. Understanding the molecular links of obesity-associated hyperinsulinemia and inflammation with carcinogenesis is therefore crucial to understanding obesity-mediated cancer. In this presentation, we discuss the central role of hyperinsulinemia and pro-inflammatory cytokines in the pathophysiology of obesity-mediated cancer. We will also review the emerging research data, which suggests that physiological and pharmacological interventions by reducing obesity-associated inflammation and hyperinsulinemia attenuates cancer incidence.