

Abstract

Obesity is expanding rapidly even in developing countries and has negative effect on human health. The emerging low-grade chronic inflammation of visceral adipose tissue is generally accepted as the cause of this negative effect. The most important factor in the inflammation development is the induction of inflammatory phenotype of macrophages and their subsequent accumulation in visceral adipose tissue. The first impulse for these changes is ambiguous but can be associated with changes in phenotype and activation status of NK cells. NK cell mediated cytotoxicity against viral infected or cancer cells is impaired by obesity. Leptin level is chronically elevated in obesity and has the counter effects on NK cells. Short-term leptin exposure causes lower cytotoxicity of NK cells but long-term leptin exposure has opposite effect. The few studies about phenotype of NK cells in visceral adipose tissue during obesity point on higher production of INF- γ and expression of NKG2D by NK cells. Further studies of NK cell phenotype in the context of obesity and in particularly in the context of visceral adipose tissue of obese subjects are important for understanding the negative effect of obesity.