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The endocannabinoid system in obesity and type 2 diabetes.

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Author information

Abstract

Endocannabinoids (ECs) are defined as endogenous agonists of cannabinoid receptors type 1 and 2 (CB1 and CB2). ECs, EC anabolic and catabolic enzymes and cannabinoid receptors constitute the EC signalling system. This system participates in the control of lipid and glucose metabolism at several levels, with the possible endpoint of the accumulation of energy as fat. Following unbalanced energy intake, however, the EC system becomes dysregulated, and in most cases overactive, in several organs participating in energy homeostasis, particularly, in intra-abdominal adipose tissue. This dysregulation might contribute to excessive visceral fat accumulation and reduced adiponectin release from this tissue, and to the onset of several cardiometabolic risk factors that are associated with obesity and type 2 diabetes. This phenomenon might form the basis of the mechanism of action of CB1 antagonists/inverse agonists, recently developed by several pharmaceutical companies as adjuvants to lifestyle modification for weight reduction, glycaemic control and dyslipidaemia in obese and type 2 diabetes patients. It also helps to explain why some of the beneficial actions of these new therapeutics appear to be partly independent from weight loss.

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