

ENDERMOLOGIE AND BASIC RESEARCH ON ADIPOSE TISSUE

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Adipose tissue, the most important place of lipid storage and mobilisation in humans, is a metabolic active tissue which secretes a multitude of agents with metabolic and endocrin properties. The major lipolytic function of the adipocyte corresponds to triglycerids catabolism which leads to the delivery of glycerol and non esterified free fatty acids in the interstitial then plasmatic compartment. Changes in the adipocyte function (hypertrophy) are often associated with venolymphatic stasis and fibrosis of connective tissue and are responsible of cellulite setting up.

From many years, microdialysis technique, which consists of introducing small size probes on tissue, has been largely used to have access at the intercellular space of the human sub-cutaneous adipose tissue. This in vivo and in situ approach allows for the study of the lipolytic response of adipose tissue after pharmacological (catecholamines) or endogenous (exercise, hypocaloric diet) stimulation. Thus, lipolysis can be studied by dosage of glycerol following administration of lipolytic agents (beta-adrenergic agonist such as isoprenaline or Isuprel®) in perfusate.

A study was carried out in order to test in situ efficacy of LPG Technique in terms of improvement of adipocyte metabolism in 8 healthy volunteer women with cellulite on thighs (grade ≥ 2). Microdialysis technique has been made at femoral adipose tissue level before and after 12 sessions of LPG Technique.

Results demonstrate that the response intensity of femoral adipose tissue after stimulation with Isuprel® is statistically increased after 12 sessions of LPG Technique. In other words, this tissue becomes more sensitive to lipolytic signals. In addition, an obvious clinical improvement of cellulite is observed after 4 weeks of intensive treatment (3 sessions/week). This effect was observed with morphometric measurements (waist, thighs, skin fold) and with a clear diminution of cellulite grade (-31,8%, $p < 0,01$). Even if complementary studies are necessary to confirm this affirmation, this experimental research allows for a better knowledge of the mechanisms of action of the LPG Technique and reveals new perspectives for adipose tissue treatment.