PSORIASIS

MITOCHONDRIAL FUNCTION IN PSORIASIS AND INSULIN RESISTANCE: A PILOT STUDY

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INTRODUCTION: Psoriasis is characterized by keratinocyte proliferation and chronic inflammation, and for a higher association with insulin resistance (IR) and other diseases. Lipid profile disturbances and up-regulation of expression of enzymes crucial for fatty acid oxidation have been reported in patients with psoriasis. Mitochondrial beta-oxidation is altered in patients with IR. A common mitochondrial dysfunction could be involved in the origin of both inflammatory diseases.

OBJECTIVE: Evaluate mitochondrial beta-oxidation in psoriatic patients with or without insulin resistance.

MATHERIAL AND METHODS: Blood and urine samples form patients with clinical diagnosis of psoriasis, and healthy lean subjects, were obtained. Insulin and glucose were determined by conventional methods. Amino acids (AA) and acylcarnitines (AC) profiles were obtained by MS/MS, urinary organic acids were analyzed by GC-MS. According to HOMA-IR values, patients were distributed into 2 groups: 1) patients with psoriasis and IR, 2) patients with psoriasis without IR. Healthy subjects were included as controls.

RESULTS: Comparison of psoriatic patients (n=20) vs. controls (n=10) showed significantly higher levels of C2 (p= 0.004) and C16:1 (p= 0.005), and relative higher amounts of citrulline and valine. Patients with psoriasis and IR as compared to controls exhibit significant higher amounts of: C3DC, C5, C6DC, C14:1, C16, C16:1 and C18:1. Comparison between psoriatic patients with and without IR showed significantly differences in C3, C3DC, C5, C16, C16OH, C18:1 and C18OH. Palmitic acid excretion was higher in psoriatic subjects.

CONCLUSIONS: Significantly higher amount of C2 (acetylcarnitine) is a reflection of an increased beta-oxidation, in psoriatic patients. C16:1 (palmitoleic carnitine) could be a

marker of psoriasis. Acylcarnitine pattern in IR psoriatic patients resembles the one previously reported in IR subjects.