

A Myristic Acid Enriched Cream Improves the Metabolic Syndrome and Increases the Membrane Fluidity: The Semyramis Study

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Objective: To evaluate a myristic acid (MA) enriched cream in obese patients without or with the metabolic syndrome (MS).

Procedure: One hundred and twenty one obese subjects (mean BMI: 37.2) were enrolled in a 3-month double blind trial. Half of them had a MS. They were randomized to consume each day a MA enriched cream in an hypocaloric diet with MA intake of 3.0, 3.5 or 4.0 g/d. MA/stearic ratios were around 1.5. Intakes of other fatty acids were at recommended levels, mainly for alpha-linolenic acid (2 g/d) with a linoleic/alpha-linolenic ratio at 3/1.

Results: In comparison with baseline, 3-month interventional diet was associated with an increase of MA and pentadecanoic acid (C15) in cholesteryl esters in all groups suggesting a good compliance for cream consumption. Reduction of weight (-6.0 kg) and waist (-6.0 cm) was observed in all six groups. HDL-C was only increased with MA intake of 4.0 g/d. Triglycerides, HOMA ratio and leptin were decreased in all patients with the MS, whereas adiponectin was increased. Comparison of evolutions showed that loss weight, increase in membrane DHA, increase in membrane fluidity and decrease in OxLDL were the highest in the lowest MA intake (3.0 g/d).

Conclusion: Influence of MA on parameters of the MS appears as a U-shaped curve with the more favourable effects for 3.0 g/d. A MA enriched cream with a total daily MA intake of 3.0 g significantly improves the MS, reduces leptin, increases adiponectin and membrane fluidity.