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Pr Dr Mr Mrs Ms

Name: QUADE

First Name: Flemming

Institution: The Obesity Clinic

Postal address: 14 Møltkesvej, Copenhagen 2000 F

Country: Denmark

Zip code:

Telephone: 31 87 02 04

Telefax: 31 87 07 87

Abstract Title: n-3 POLY-UNSATURATED FATTY ACIDS AS A SUPPLEMENT TO A
(Please type with capital and small letters)

FORMULA-BASED LOW CALORIE DIET: EFFECT ON BLOOD LIPIDS AND
OTHER RISK PARAMETERS IN OBESE PATIENTS. A RANDOMISED, DOUBLE-BLIND
STUDY.

Preferred Presentation Form

Oral presentation of 10 minutes + 5 minutes for discussion

Poster presentation only

Preferred Topic

- S 1 Body composition
- S 2 Pharmacology
- S 3 Energy metabolism
- S 4 Endocrinology
- S 5 Epidemiology
- S 6 Appetite
- S 7 Biochem/mol. biology
- S 8 VLCD/behaviour mod.
- S 9 Fat Distribution
- S 10 Exercise and physiology
- S 11 Genetics/animal mod.
- S 12 Adipose tissue
- S 13 Other:

Abstract Form

Not to be filled in

(Fill out exactly according to the sample)

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Quade F (1), Maglegaard J (1), Jensen L B (2)

1 The Obesity Clinic, Møltkesvej, Copenhagen

2 Department of medicine, Sundby Hospital, Copenhagen

There is growing evidence to suggest that the ingestion of marine oils containing n-3 poly-unsaturated fatty acids has a favourable influence on various risk parameters, especially blood lipids and coagulation, and also on incidence and mortality of atherosclerotic diseases.

The aim of the present study was to see if the supplementation of n-3 poly-unsaturated fatty acids to a low calorie diet improves the obesity-related risk factors more than can be explained by the weight loss in itself.

:53 obese patients, 51 women and 2 men, entered the study. Initial data were: age: 19 - 68 years; weight: 69.5 - 141.9 kg; BMI: 27.1 - 44.8 kg/m²; percentage overweight: 20 - 110%. Design: The treatment period was 15 weeks, during which all patients took a formula diet (Nupo®, oluf mark a/s) as a mandatory basis: 443 kcal (1.9 MJ) for women, and 501 kcal (2.4 MJ) for men. After 2 weeks on this VLCD they were allowed a free choice of supplementary food and drink to the limit of 1068 kcal (4.5 MJ) for women and 1126 kcal (4.7 MJ) for men. After a 4 weeks run-in the patients were randomised to formula diet with (group A; n=28) or without (group B; n=25) n-3 poly-unsaturated fatty acids (daily dose: 875 mg).

Results: At no time during the investigation, i.e. at start, at randomisation (week 4), nor at the end (week 15) were there any significant differences between the 2 groups with regard to effect parameters.

Both groups lost considerable amounts of weight, both during run-in and after randomisation. Mean percentage reduction of overweight was: 21 % for A, and 22 % for B. Mean reduction in BMI: 4.5 kg/m² for A, and 4.8 kg/m² for B. Also waist/hip ratio and abdominal sagittal measurement decreased significantly. There was a fall in diastolic blood pressure, although it did not reach statistical significance. There were no changes in bleeding time measurements. Platelets fell significantly during run-in, and showed a small increase after randomisation.

Total cholesterol and HDL decreased significantly during run-in, and increased somewhat from week 4 to 15. The ratio: total cholesterol/HDL decreased, though not significantly, in both groups during run-in, and this moderate reduction continued in group B (P= 0.17). By contrast, the difference in ratio between week 4 and week 15 was highly significant in group A (P=0.0001).

Triglyceride was significantly reduced in both groups during run-in, and this decrease continued in the n-3 group. By contrast, there was a significant secondary increase from week 4 to week 15 in the control group.

CONCLUSION: This study confirms that a weight loss is accompanied by favourable alterations in waist/hip ratio, sagittal abdominal diameter, and hence in blood lipids. (An initial decrease in HDL and apoprotein A was transient, and probably due to the low fat content of the diet). Further, it seems that even a moderate dose of n-3 poly-unsaturated fatty acids may have a reducing effect upon the ratio: total cholesterol/HDL and on triglyceride, and that these reductions cannot be explained by the weight loss alone.

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Name: QUADE

First Name: Flemming

Institution: The Obesity Clinic

Postal address: 14 Moltkesvej , Copenhagen 2000 F

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