

ICCN Poster Presentations

Clinical nutrition: diagnosis and management

Zinc supplementation altered phospholipids' fatty acids pattern in young healthy women

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The aim: The evaluation of the influence of the zinc daily food ration (DFR) supplementation on fatty acid profile of plasma phospholipids.

Material and methods: The study covered a group of 40 women, mostly female students (average age 22.5 ± 0.8 years) from the Mid-West part of Poland. The study was carried out from 2001-2003. Students were supplemented with 25 mg of Zn⁺². The supplementation carried on for 50 days with daily dose 25mg Zn/day. Fatty acid methyl esters were analysed by the gas chromatography (Hewlett Packard - 6890 Series) with flame-ionisation detection method, after being separated by the high precision thin layer chromatography. U Manna-Whitney'a test was used to confirm statistically significant differences at $p=0.05$. Consent for the study was obtained from the Ethical Committee, Medical Academy, Poznan, Poland.

Results: A dominant group of fatty acids in plasma phospholipids were saturated fatty acids, which composed about 50% of the sum of all fatty acids (range from 53.4% to 58.0%). Polyunsaturated fatty acids occurred in the range from 24.9% to 28.1% (half amount of the saturated acids), whereas the monounsaturated fatty acids content presented one third of fatty acids content (range from 16.4% to 17.9%). The statistically significant changes of the % content were observed: decrease of the amount of saturated fatty acids - (57.3 ± 3.36 vs 55.1 ± 3.29 ; $p=0.0017$) and increases - of the polyunsaturated fatty acids (25.2 ± 2.94 vs 27.1 ± 3.17 ; $p=0.0034$), of the alpha-linoleic acid (0.34 ± 0.06 vs 0.40 ± 0.06 ; $p=0.0019$) and of the arachidonic acid (3.92 ± 0.71 vs 4.82 ± 1.09 ; $p=0.0001$).

Conclusions: The zinc supplementation of daily food rations of women may influence on the change of fatty acid profiles in blood plasma phospholipids, among others LCPUFA.

Nutritional preferences of opiate addicted patients during the methadone maintenance treatment

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Background: The literature data as well as clinical observation of addicted persons indicate the preference of sweet products consumption. Some authors suppose that the sweet taste preference may be a marker of increased risk of opiate and alcohol dependence development. The aim of this study was to estimate the frequency of fat and sweet food consumption that stimulates the Brain Reward System (BRS) in 48 participants of methadone programme. The main goal of this programme was not only to improve the physical and mental health of opiate dependent persons, but to limit their improper nutritional habits as well.

Material and methods: The study included 36 men aged 20-46 year and 12 women aged 21-33 year. The opiate (morphine, heroine) dependence duration ranged from 3 to 24 years. The evaluation of the diet and the assessment of nutritional status were performed three times: 1st examination -before treatment, 2nd examination -after 2 months and 3rd -after 9 months of methadone maintenance treatment. Food consumption quality was estimated with the use of the Questionnaire of Frequency Intake Food Products. The statistical calculations were performed by using STATISTICA v. 6.0 program with the application of factor and cluster analysis. Three clusters were created. They included food products consumed: A- occasionally, B-rarely, C-often.

Results: The examined opiate abusers preferred sweet taste. The frequency of sweet products consumption was the highest in the early stage of methadone programme. In the first examination most of sweet products were found in cluster A, whereas in the third examination in cluster C. The analysis of 24-hour recall showed that mono- and disaccharides always provided much more that recommended 10% of energy (20% in the first and 15% in the third examination).

Conclusions: The opiate abusers intuitively chose the products that stimulate BRS. The diminished frequency of disordered nutrition habits and behaviour was observed during 9 months' methadone maintenance treatment programme conducted in opiate dependent patients at Medical College Jagiellonian University in Krakow, Poland.