Poster Topical Area: Nutritional Epidemiology

Location: Hall D

Poster Board Number: 796

P20-119 - Hair Lithium is Decreased in the Hair of the Depressed Subjects

Sunday, Jun 10  8:00 AM – 6:00 PM

Objectives. Today, depression is the most common human mental impairment in the world of unknown biochemical nature. Recent studies revealed that the low dietary lithium intake is associated with the increased incidence of human suicide, what is the gravest form of human depression. We have already demonstrated that the adequate human lithium nutritional status is attained when H-Li concentrations are within the range of 0.014-0.100 μg·g⁻¹ for both women and men. The aim of this study was to assess the lithium nutritional status of the depressed subjects.

Methods. The study was conducted on adult persons by strictly adhering to the Principles of the Declaration of Helsinki. Hair lithium (H-Li) was analyzed in Control (n = 655♀, 74 ♂) and Depressed (n = 299♀, 40 ♂) subjects fed on a standard mid-European diet. Depression was diagnosed according to the DSM-IV criteria by a board certified psychiatrist. Hair Li was analyzed with the inductively coupled plasma mass spectrometry (ICP MS) at the Center for Biotic Medicine, Moscow, Russia; the frequency distribution of H-Li log transformed data was analysed with a median derivative model (Thyroid 2014;24:1018-1026).

Results. The observed sigmoid curves had a linear range segment (μg·g⁻¹): Control·H-Li 0.015-0.052 (Median 0.027) and Depression·H-Li 0.010-0.050 (Median 0.015). Hair Li concentrations for the linear (adequate) segment of the cumulative frequency distribution sigmoid curve were lower in the Depressed than in the Control subjects (ANOVA p<0.05).

Conclusions. Our results indicate that the depressed subjects having H-Li of less than 0.052 μg·g⁻¹ would benefit if low level of dietary Li supplementation are used as an adjuvant to the standard antidepressation therapy: we tentatively suggest 50 μg oral Li every twelve hours Personalized H-Li concentrations moloring is advisable to control for the adequate and non-toxic oral Li dose intake every three month.

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