大台北地區注意力欠缺過動障礙兒童之飲食攝取與血液脂肪酸組成之研究

Dietary Pattern and Blood Fatty Acid Profile with Children of Attention-deficit Hyperactivity Disorder in Taipei Area

中文摘要

注意力欠缺過動障礙兒童(簡稱過動兒)主要有注意力不集中、過動及衝動等三大行爲特徵。其成因尚未明確，因此，本研究之目的爲調查大台北地區過動兒的飲食型態與血漿及紅血球脂肪酸組成，並探討過動兒行爲異常的作用機制與其飲食型態和血液脂肪酸組成之間的關聯性。實驗方法方面，於臺安醫院小兒心智科招募 38 位平均年齡 8.45 歲之過動兒，以及 32 位平均年齡 7.89 歲的兒童爲對照組，進行體位測量、24 小時飲食回憶紀錄以評估營養素的攝取量、血液生化分析、血漿及紅血球以脂肪酸組成分析，結果發現，24 小時飲食回憶紀錄方面，過動組的維生素 C 與鐵質攝取量比對照組顯著較高，其餘營養素攝取量兩組間無顯著差異。血液生化分析方面，過動兒組的血清總蛋白質濃度較對照組低($p<0.05$)。血漿脂肪酸組成方面，過動兒的 γ -次亞麻油酸(γ -linolenic acid, 18:3 n-6)較對照組高($p<0.05$)。紅血球脂肪酸組成方面，過動兒的 γ -次亞麻油酸(γ -linolenic acid, 18:3 n-6)亦較對照組高($p<0.05$)，而油酸(oleic acid, 18:1 n-9)、亞麻油酸(linoleic acid, 18:2 n-6)、次亞麻油酸(linolenic acid, 18:3 n-3)以及花生四烯酸(arachidonic acid, 20:4 n-6)較對照組低($p<0.05$) 。由以上結果可知，過動兒與一般兒童體內脂肪酸組成之差異，可能不是由飲食所造成，而是體內脂肪酸代謝的問題。

英文摘要

Attention-deficit hyperactivity disorder (ADHD) is the term used to describe children who are inattentive, impulsive and hyperactive. Although the pathogenic mechanism is still unknown, nutritional factors maybe relative to ADHD. The aim of this study is to evaluate the dietary pattern and the blood fatty acid profile in children with ADHD in Taipei area. Thirty-eight ADHD children (8.45 years) in this study and thirty-two (7.89 years) normal children were enrolled as the control group. About 24- hour dietary recall, vitamin C and iron intake of children with ADHD were significantly higher than those of normal children. The concentration of blood total protein was significantly lower of children with ADHD. About the blood fatty acid profile, γ-linolenic acid (18:6 n-6) of plasma and red blood cell were higher than those in normal children. On the other hand, oleic acid (18:1 n-9), linoleic acid (18:2 n-6), α-linolenic acid (18:3 n-3) and arachidonic acids (20:4 n-6) were significantly lower in children with ADHD than those in normal children. From these result, it was

observed that blood fatty acid profile with ADHD was different from those in normal children. It resulted from fatty acid metabolism rather than dietary intake.