

母子世代血液中四種脂質、尿酸及白蛋白之相關性研究

Correlations of Serum Lipids, Uric Acid, and Albumin

Among Mothers, Offspring, and Siblings in Taipei,

Taiwan

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摘要

本研究目的主要探討 3 至 7 歲 208 位受試幼童(Y)與 111 位母親(X)及 57 位同胞(Z)血液中三酸甘油酯(triglyceride)、總膽固醇(total cholesterol)、高密度脂蛋白膽固醇(HDL-cholesterol)、低密度脂蛋白膽固醇(LDL-cholesterol)、尿酸(uric acid)、白蛋白(albumin)、等六項。分別進行相關顯著性測驗、新裔回歸分析及顯著性測驗、駢對-t 值(paired-comparison)、回歸係數、(regression coeff, bop)、遺傳率(heritability, h^2)測驗。結果顯示幼童與母親之六個性狀回歸係數(b(下標 yx))中除三酸甘油酯為顯著($p < 0.05$)外,其餘均為極顯著($p < 0.01$)。而同胞與母親之回歸係數(b(下標 zx))極顯著者($p < 0.01$)分別為總膽固醇、低密度脂蛋白膽固醇及白蛋白,而尿酸為顯著($p < 0.05$)。在受測幼童及其同胞除總膽固醇為顯著($p < 0.05$),其餘均為極顯著($p < 0.01$),此結果顯示可能是由遺傳因子所控制。因遺傳率(h^2)分別高達 0.75-1.0、0.77-1.0、0.96-1.0 及 0.48-0.82。本次研究發現,臺北幼童血脂質與其母親血脂質顯著相關,可能是由遺傳因子所控制。

Abstract

The purpose of this study was to investigate the correlations of serum lipids, uric acid, and albumin, among mothers ($n=111$), offspring ($n=208$), and siblings ($n=57$) in Taipei, Taiwan. Analytical items included serum triglyceride, serum total cholesterol, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, uric acid, and albumin. Statistical analysis was performed according to the SAS UNIVARIATE procedure; while regression coefficient, parent-offspring regressions, paired-comparison and heritability were estimated. These results show higher heritabilities of four types of serum lipids, uric acid and albumin between mothers and testers ($b(\text{subscript YX})$) or siblings ($b(\text{subscript ZX})$) by parent-offspring regression analysis. Regression coefficients ($b(\text{subscript YX})$) of six characters were significantly different ($p < 0.05-0.01$). Regression coefficients ($b(\text{subscript ZX})$) for total cholesterol, low-density lipoprotein cholesterol, uric acid, and albumin were significantly different ($p < 0.05-0.01$), showing the result of genetic control, because

their heritabilities were very high at 0.75~1.0, 0.77~1.0, 0.96~1.0, and 0.48~0.82, respectively. This study disclosed that the serum lipids of children in Taipei, Taiwan were significantly correlated with that of parents, which may be attributed to the result of genetic control.