IS THERE RACIAL DIFFERENCES IN ADIPOSY AND SERUM LEPTIN? IF SO, WHEN DOES IT OCCUR? -TWO NATIONS' NUTRITION STUDY-

Teruyoshi Amagai, Shoji Igawa*, R.yuji Watanabe**

Department of Pediatric Surgery, University of Tsukuba, *Nippon Sport Science University, **Kanagawa Prefectural College of Nursing and Medical Technology, Tsukuba, Ibaraki, Japan

Purpose: Leptin is end-product of OB-gene which exists in mature white adipose tissue. We hypothesized that there is adiposity distribution difference among different races, and that these differences affect serum leptin concentration. To test this, we conducted randomized inter-racial prospective study.

Methods: Among children in Japan (J) and El Salvador (El). Subjects included 11 year-old children; 60 J (30 boys, 30 girls) and 60 El (30 boys, 30 girls). They were randomly included into this study. Subjects lived in urban area in both. In this study, anthropometric indices (height, weight, mid-upper arm circumference-MAC, triceps skin-fold-TSF, subscapular fat thickness-SFT) and arm muscle area (AMA) and arm fat area (AFA), trunk fat area (TFA) were calculated. Results were interpreted in two forms; one was arm adiposity by AFA and another was trunk adiposity by SFT. Serum leptin was measured using blood samples taken at 10 o'clock. All tests were conducted after taking agreement of parents of subjects in two countries.

Results: Height, weight, height for age, weight for height did not differ in J and El. However, J showed significantly higher AFA and lower TFA than those of El (p<0.05). Serum leptin in J was significantly lower than those of El(p<0.05).

Conclusions: We concluded that high adiposity might be high incidence of high serum leptin comparing to higher arm adiposity. To predict serum leptin concentration, trunk adiposity is more proper than arm adiposity. These change might occur as late as age of eleven. 

(183)