

## 28 SNPs OF ADIPONECTIN RECEPTOR GENES IN PEDIATRIC DIABETES AND OBESITY

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Adiponectin is a hormone secreted by adipocytes that acts as an antidiabetic and anti-atherogenic adipokine. Levels of adiponectin in the blood are decreased under conditions of obesity, type2 diabetes and lipotrophic diabetes. Recently, Yamauchi et al. isolated cDNA for adiponectin receptors (AdipoR1 and AdipoR2) (Nature 423:762-768, 2003).

In this study, we identified several SNPs in adiponectin receptor genes. Associations of these SNPs with insulin resistance, obesity or diabetes have been investigated in 60 patients with pediatric obesity and 30 patients with pediatric diabetes. Identification of SNPs altering expressions or functions of Adipo R1 and Adipo R2, which are associated with insulin resistance, will be useful in the analysis of pathogenesis of insulin resistance associated with obesity and diabetes in childhood and future development of adiponectin receptor agonists as a tailor-made treatment strategy for obesity and diabetes.

## 30 Consideration of hyperthyrotropinemia in newborn babies by kombu, other seaweed and instant kombu soups overload during pregnancy these mothers (interim report)

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[Aim] It has increased during 20 years that hyperthyrotropinemia with low or normal T4 level. It thought that there was spread of kombu, other seaweed and instant kombu soups containing a high level of iodine.. The present study was done to measure the concentrations of iodine in the daily Japanese diet consumed by the people of Japan, and we investigated the clinical course of newborn infants from mothers who ingested much iodine during pregnancy.

[Object and Method] From April 2000 to March 2002, 37,724 Japanese infants were screened for congenital hypothyroidism in Kumamoto Prefecture and 34 underwent confirmation test. To measure iodine content, concentrations of iodine in serum, urine, breast milk and food were measured using ICP-MS. The iodine ingestion under pregnancy was caught and investigated, it is marketing, and 100 kinds of iodine of a kind was measured and the amount of iodine ingestion per day was calculated.

[Result] The diagnosis in after-the-birth one year was 5 congenital hypothyroidism, one transient hypothyroidism(TBII), 22 transient hyperthyrotropinemia, 5 hyperthyrotropinemia by over-iodine, and normal one case. Of 5 hyperthyrotropinemia by over-iodine, TSH  $38.7 \pm 16.6\mu\text{U/ml}$ , FT4  $1.44 \pm 0.53\text{ng/dl}$ , and pregnancy was one-day 3014  $\pm 1076\mu\text{g}$ , and they were newborn infant serum iodine  $25.8 \pm 8.5\mu\text{g/dl}$  and breast milk iodine  $33.5 \pm 6.8\mu\text{g/dl}$ .

[Conclusion] We proposal that in order to decrease hyperthyrotropinemia at newborn we should restrict iodine ingestion of a pregnant woman.

## 29 OCCURRENCE FREQUENCY OF CONGENITAL HYPOTHYROIDISM DETECTED BY NEONATAL SCREENING: THE SURVEY IN THE IMPORTANT 8 AREAS.

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There is the report of occurrence frequency of congenital hypothyroidism (CH) by neonatal mass-screening by the Ministry of Health, Welfare and Labor, but there is a problem in the appropriateness. To know the exact frequency, we investigated the occurrence frequency in 8 important areas where the information of the patients is grasped sufficiently. [Method] The object area of the survey is 8 areas of Hokkaido-Pref., Sapporo-shi, Miyagi Pref., Chiba Pref., Hiroshima Pref., Nagasaki Pref., Kumamoto Pref., Kagoshima Pref. The total screened number, positive number by screening between 1991~1997, the number grasped with this survey, and the diagnosis name were investigated. The case number was revised from the grasp rate in the this survey. The diagnosis name complied with the definition of a/the Ministry of Health and Welfare research group. This survey was carried out in June, 2003 from June, 2002.

[Results] The frequency of CH that is discovered with neonatal mass-screening was 1 person to 1,548~4,364 (average 3,002) to people. The frequency of transient hypothyroidism was 1/5,108~60,053 (average 5,888). The frequency of transient hyper-thyrotropinemia was 1/1,727~∞. The frequency of both transient thyroid abnormal patients was 1/1,039~11,868 (average 2,360), there was a remarkable difference by the area.

[Conclusion] Because there is the possibility that the one that is not permanent into the case in treatment as CH patient is included yet among the high frequent area, the occurrence frequency of CH is estimated by 3,500~4,000 people with 1 person.

## 31 DIAGNOSIS AND TREATMENT OF THE POSITIVE CASES FOR CONGENITAL HYPOTHYROIDISM SCREENING TEST

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Aims: Mild congenital hypothyroidism(CH), transient hypothyroidism and transient hyperthyrotropinemia, are recognized after the start of neonatal screening. The indication of treatment of those patients brought us some difficulties. In this paper, we shows clinical data the cases with positive screening test who visited our hospital. **Subjects and Methods** ; The subjects are 83 patients with positive screening test and with L-T4 supplement therapy from 1989 to 1999. <sup>125</sup>I-scintigraphy were done in those cases at the age of 3 or 4. We divide the cases into four groups. Group 1A were the cases started L-T4 supplement less than second months after their birth and the therapy were continued after scintigraphy and group 1B were those discontinued after scintigraphy. Group 2A were the cases with the TRH test and started L-T4 supplement after 3<sup>rd</sup> months to 18<sup>th</sup> months after their birth and the therapy were continued after scintigraphy and group 2B were those discontinued after scintigraphy. **Results**; 1A=39, 1B=25, 2A=18, 2B=1 patients.

	n	Screening data	TSH at first visit	FT4 at first visit
1A+1B	64	46.4±46.9*	46.0±206.6*	0.8±0.4*
2A+2B	19	16.8±8.0*	12.3±13.5*	1.5±0.7*
1A+2A	57	42.4±48.4	116.3±214.5	1.1±0.6*
1B+2B	26	33.4±27.8	110.7±118.2	0.7±0.4*

\*a,\*b,\*c,\*d were significant.

	n	doze at scintigraphy	TSH at scintigraphy	FT4 at scintigraphy
1A+1B	64	35.1±17.9*	32.3±57.0*	1.1±0.5
2A+2B	19	25.8±6.1*	7.0±1.8*	1.2±0.2
1A+2A	57	37.3±17.7*	37.2±58.9*	1.0±0.4*
1B+2B	26	23.5±7.0*	3.4±1.3*	1.4±0.2*

\*a,\*b,\*c,\*d,\*e were significant. **Conclusion**; After scintigraphy, almost all patients of group2 were continued with the L-T4 supplement therapy. The dozes of them are significantly lower than those of other groups. We need further observation to this group to assess how long should they keep L-T4 supplement therapy.