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NATIONAL SCREENING FOR CONGENITAL HYPOTHYROIDISM IN TAIWAN

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The morbidity of congenital hypothyroidism (CHT) in mentally retarded Chinese children was estimated at around 0.15-0.5% in Taiwan. Therefore, A pilot project has been carried out for developing a nationwide neonatal screening program for early diagnosis and treatment. From 1984.1 to 1985.6 the capillary blood of 17,082 newborns was collected on filter paper about five days after birth by 13 hospitals, Nan-Tou County health stations, and obstetric clinics and mid-wives in Hsin-Chu County. The effective collection rate was 95%. The dry blood samples were mailed to the screening center (Clin. Biochem. Res. Lab., VGH) and TSH in the sample was determined by enzymeimmunoassay. The cases with high positive values (>20 mU/L blood) were referred to one of the 4 local diagnosis and treatment centers immediately by phone calls. A second sample was requested in borderline positive (10-20 mU/L blood) cases and was collected by the sample collecting system or the follow-up system, which consists of public health nurses in every county on this island. If the result was still positive, the case was then referred to local centers. Six cases of CHT (1 aplastic, 3 ectopic, 2 enlarged) were confirmed. All cases of CHT were diagnosed and treated within 23 days of life. They are developing normally at the present time.

The integrated neonatal screening system developed by the pilot project was adopted to be the nationwide service program by the Dept. of Health in late 1984. Two screening centers was established and more than 50% of newborns (approx. 150,000) were screened in the 1988 fiscal year. From 1984.1 to 1988.12, 202,106 newborn samples collected from 249 delivery units were screened by our center. One hundred and four CHT (8 aplastic, 2 hypoplastic, 22 ectopic, 21 enlarged, 31 scanned normal, 20 not scanned) were detected. Most of them were diagnosed and treated within one month of life (range 10-54 days). The incidence of CHT in the neonates was estimated between 1/1900 and 1/6300 (95% confidence intervals 1/1630 to 1/9660) in Taiwan. The benefit vs cost ratio for neonatal screening of CHT in Taiwan was estimated around 2.0. The ratio is expected to increase to 4 in the next few years as the social-economic condition changes.