health technology assessment

EXECUTIVE SUMMARY

SCREENING FOR CONGENITAL HYPOTHYROIDISM

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MEDICAL DEVELOPMENT DIVISION
MINISTRY OF HEALTH
MOH/PAK

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INTRODUCTION

Congenital hypothyroidism causes mental retardation that can be prevented by prompt proper treatment. In the South East Asian region, apart from Singapore and Hong Kong, congenital hypothyroid screening is not being done routinely on a nation-wide scale.

RESULTS & DISCUSSION

The birth prevalence of congenital hypothyroidism for Malaysia has been estimated to be in the region of 1 in 2 500 to 1 in 3 500 live births. Thus, in 1996 for example, 180 children would have been born with congenital hypothyroidism. The majority of these children would have been detected late, and would already have had moderate to severe mental retardation. Mass screening of the newborn for congenital hypothyroidism will allow diagnosis and treatment of nearly all infants with congenital hypothyroidism before the appearance of clinical features. Intelligence remains within normal range if treatment begins before the age of one month.

The cost-benefit ratio in relation to detecting and treating congenital hypothyroidism compared to the productivity of the treated child is 1: 8.9, meaning that society gets a returns of approximately USD 8.90 for each dollar spent on congenital hypothyroidism screening. A nationwide congenital hypothyroidism screening program, once established, should produce a savings to society of U$ 50 million per year.

With respect to local costing, based on 523 324 live births and an estimated incidence of 1:3 000 per year, the total cost of a screening programme would be about RM 3 172 037 annually (taking into account only the costs of reagents and cost of recall). It is estimated then that about 175 cases of congenital hypothyroidism will be detected annually. The cost of treatment of these cases is estimated to be RM 5 652 annually or RM 451 710 over their whole life span.

CONCLUSIONS

There is sufficient evidence to indicate that screening for hypothyroidism is safe, effective, and cost-effective. Adequate coverage can be obtained by tagging on to the existing neonatal screening programme for G6PD, without the need for additional work, time and manpower.

RECOMMENDATIONS

It is recommended that a national screening programme for congenital hypothyroidism coordinated by hospital paediatric departments be instituted. TSH testing using cord blood serum should be carried out, with supplementary T4 testing for borderline samples. These tests can be conducted at state hospitals.

For patients with congenital hypothyroidism, the recommended treatment guidelines should be followed.