**INTRODUCTION**

Although newborn screening (NBS) for congenital hypothyroidism (CH) in Japan started more than 40 years ago, the true prevalence of CH remains unclear. Prevalence estimations among the NBS-positive CH individuals include those with transient hypothyroidism and transient hyperthyrotopinemia, and re-evaluation with increasing age is necessary to clarify the actual incidence. Thus, we re-evaluated the incidence of permanent CH multiple times.

**AIM**

To determine the true prevalence of permanent CH in Niigata Prefecture, Japan. The secondary outcome was the prevalence of transient CH among patients with CH who received LT4 replacement.

**METHOD**

Subjects: Of the 106,114 patients who underwent NBS in the Niigata Prefecture, Japan, between April 2002 and March 2006, 116 were examined further due to high TSH levels (≥8mIU/L) and were included in the study. Methods: We retrospectively evaluated their levothyroxine sodium (LT4) replacement status. Best practices and clinical strategies. Best Pract Res Clin Endocrinol Metab. 2014;28(2):175-187.

**CONCLUSIONS**

In our study, 62.5% of the LT4 replacement patients discontinued treatment by 15 years of age. From these results, the prevalence of permanent CH in the Niigata Prefecture during this period was 1 in 2,500–3,500 children.

**REFERENCES**


**ACKNOWLEDGEMENTS**

We would like to thank Keiko Hokari and Naoko Otabe of the Niigata Health Service Center for providing us with data on NBS in the Niigata Prefecture. We would like to thank all the patients who participated in this study.

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**RESULTS**

The background of the subjects are listed in Table 1. Fifteen percent of the NBS-positive infants had a low birthweight. Of the 116 NBS-positive subjects with high TSH levels, 105 (91%) were evaluated at our hospital (Figure 1).

**Table 1: Subject backgrounds**

| Sex | Male (54), female (62) |
| NBS-positive timing | First examination (28), second examination (88) |
| TSH level in filter paper at NBS | Median (interquartile range) 10.8 (9.9–31.3) mIU/L |
| Birth weight (BW); mean ± SD (range) | 3030 mIU/L; n (%) 29 (28%) |
| 10–30 mIU/L; n (%) 55 (47.4%) |
| 5–10 mIU/L; n (%) 32 (27.5%) |
| Transient CH | 0–5 mIU/L; n (%) 7 (6.3%) |

**METHOD**

Subjects: Of the 106,114 patients who underwent NBS in the Niigata Prefecture, Japan, between April 2002 and March 2006, 116 were examined further due to high TSH levels (≥8mIU/L) and were included in the study.

Methods: We retrospectively evaluated their levothyroxine sodium (LT4) replacement therapy status from the first visit to 15 years of age (specifically, re-evaluation at age 2-4 years, etiological diagnosis determination for CH after 5 years of age, and re-evaluation at final height).

**CONCLUSIONS**

In our study, 62.5% of the LT4 replacement patients discontinued treatment by 15 years of age. From these results, the prevalence of permanent CH in the Niigata Prefecture during this period was 1 in 2,500–3,500 children.

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