

ORIGINAL ARTICLE

**Nutritional Status in Childhood Thalassaemia
at the Department of Child Health
University of North Sumatera
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by

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Abstract

A-10 year (June 1979 to May 1989) study on the nutritional status of children with thalassaemia was done.

The number of patients was 131; 75 (57.25%) were males and 56 (42.75%) females. A study on nutritional status by the age group was performed in 123 cases at the first diagnosis. The incidence of malnourished children over 1 year of age was significantly higher than in below 1 year of age cases ($p < 0.05$).

Introduction

Thalassaemia is a hemolytic anemia which is nowadays frequently encountered. Hereditary factors play an important role in the occurrence of this disorder (Nienhuis et al., 1975).

People who live over Mediterranean Sea show high prevalences of this disease, particularly Italian, Greece, and those who live in the Mediterranean islands (Pearson, 1987). A *Thalassaemia belt* extends along the shore of the Mediterranean and continues through Turkey, Iran, India, South East Asia and Southern China (Festa, 1987).

Generally, the nutritional status is

affected in the young child, but this malnutrition may be more common in older children (Wahidiyat, 1979), although other factors can also interfere with this nutritional status.

The nutritional status of children with thalassaemia at the Department of Child Health, School of Medicine, University of North Sumatera has not been studied so far. For this reason this paper is to report the result of the assessment of the nutritional status of children with thalassaemia admitted to the Hematologic Sub Division Dr. Pirngadi Hospital, Medan.

Materials and methods

This study was done by collecting all medical records of patients with thalassaemia admitted from June 1979 to May 1989.

The data included age, sex, body weight, parent's profession, and the time of the first admission in our department. The diagnosis thalassaemia was based on clinical and laboratory findings.

The nutritional status was assessed according to body weight by age. For

children under five years, the KMS (Road to Health) chart was used; while Harvard International Standard was used for those older than five years with the notion that a body weight more than 80% of the 50th centile was classified as normal (well-nourished), 60-80% as moderate malnutrition, and less than 60% severe malnutrition.

For statistical analysis Chi square test was used.

Table 1 : Distribution of patients by age and sex

| Age (years) | SEX | | | | Total |
|-------------|--------|------|--------|------|-------|
| | Male | | Female | | |
| | Number | % | Number | % | |
| 0 - 1 | 12 | 52.3 | 11 | 47.8 | 23 |
| 3 | 19 | 54.3 | 16 | 45.7 | 35 |
| 5 | 14 | 56.0 | 11 | 44.0 | 25 |
| 10 | 19 | 54.3 | 16 | 45.7 | 35 |
| >10 | 11 | 84.6 | 2 | 15.4 | 13 |
| Total | 75 | 57.3 | 56 | 42.7 | 131 |

Table 2 : Nutritional status by age group on 123 thalassaemia cases

| Age (years) | Nutritional status | | | | Total |
|-------------|--------------------|-------|--------------|--------|-------|
| | Wellnourished | | Malnourished | | |
| | Number | % | Number | % | |
| 0 - 1 | 8 | 34.8 | 15 | 65.2 | 23 |
| 3 | 3 | 9.7 | 28 | 90.3 | 31 |
| 5 | 6 | 27.3 | 17 | 72.7 | 23 |
| 10 | 4 | 12.1 | 29 | 87.9 | 33 |
| 10 | 0 | 0 | 13 | 100.00 | 13 |
| Total | 21 | 17.07 | 102 | 82.93 | 123 |

$$x^2 = 10.860$$

$$df = 4$$

$$p < 0.05$$

Results

During the study period there were 131 cases of thalassaemia. The sex and age distributions were depicted in Table 1, while cross tabulation of age group and

nutritional status was depicted in Table 2. It is shown that 102 out of 123 cases were malnourished. Babies of less than 1 year of age had the least malnourished proportion.

Discussion

During ten years (June 1979 to May 1989) there were 131 cases diagnosed as thalassaemia, consisting of 75 (57.2%) males and 56 (42.8%) females. Eighty three (63.4%) children were under five years old and 48 (36.6%) were older than five years (table 1).

The youngest at the first time of diagnosis of thalassaemia was 3 months and the oldest 14 years old.

Of the 131 children with thalassaemia, only 123 had their nutritional status analyzed. Most of them, namely 102 (82.9%) had malnutrition, where 71

(57.7 %) were moderate and 31 (25.2 %) severe (Table 2).

Among the age group of 0-1 years, 15 (65.2 %) had malnutrition; while in the age groups of 1-3, 3-5, 5-10 and over 10 years 90.3 %, 72.7 %, 87.8 % and 100% respectively had malnutrition. Statistical analysis indicated significant differences in nutritional status between 0-1 year age group compared with the age groups of 1-3 years, 5-10 years and older than 10 years ($p < 0.05$), thus revealing that malnutrition had developed after the first year of life.

Conclusion

1. It was found that 102 (82.9%) patients with thalassaemia in this study had malnutrition.
2. Malnutrition occurred after 1 year of age.

REFERENCES

1. FESTA, R.S.: Current concepts in the management of Thalassaemia. *Indian J. Pediat.* 54 : 376-389 (1987).
2. NIENHUIS, A.W.; PROPPER, P.D.: The Thalassaemia; in Nathan, *Hematology of infancy and childhood*; 1st ed., pp. 726-787 (Saunders, Philadelphia 1975).
3. PEARSON, H.A.: Thalassaemia; in Nelson, Behrman, Vaughan, Nelson, *Textbook of pediatrics*; 13th ed., pp. 1052, 1054 (Saunders, Philadelphia, London, Toronto, Mexico city, Rio de Janeiro, Tokyo 1987).
4. WAHIDIYAT, I.: Penelitian Thalassaemia di Jakarta; Tesis, Universitas Indonesia, Jakarta (1979).