

ASSOCIATION BETWEEN THYROID STIMULATING HORMONE AND HEMOGLOBINE A1C IN TYPE 1 DIABETES MELLITUS CHILDREN



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Background:

Type 1 Diabetes Mellitus children are at risk to suffer from thyroid dysfunction. The association between thyroid stimulating hormone and hemoglobine A1c is still controversy.

Objective:

To determine the association between thyroid stimulating hormone and hemoglobine A1c in type 1 Diabetes Mellitus children.

Methods:

Study design: cross sectional

Time : January - June 2017

Place :Pediatric endocrine OPC dr Soetomo Hospital.

Inclusion criterias: T1 DM children, aged 7 until <18yo.

Exclusion criterias:diabetes ketoasidosis, previously diagnosed thyroid problems and patients hospitalized in PICU.

Table 1. Distribution of HbA1c and TSH level in T1DM children

TSH (mIU/L)	HbA1c		Total
	<9,0	≥9,0	
<2,2	9 (39,1%)	14 (60,9%)	23 (100,0%)
≥2,2	4 (36,4%)	7 (63,6%)	11 (100,0%)
Total	13 (38,2%)	21 (61,8%)	34 (100,0%)

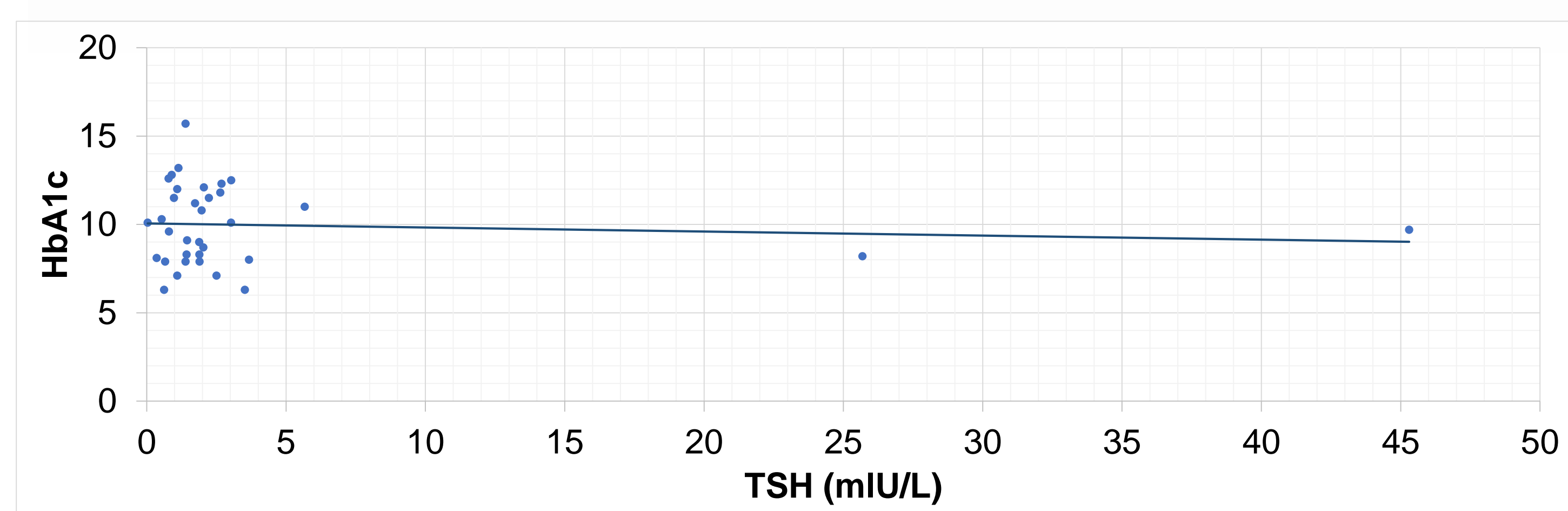


Figure 1. Association between TSH and HbA1c level

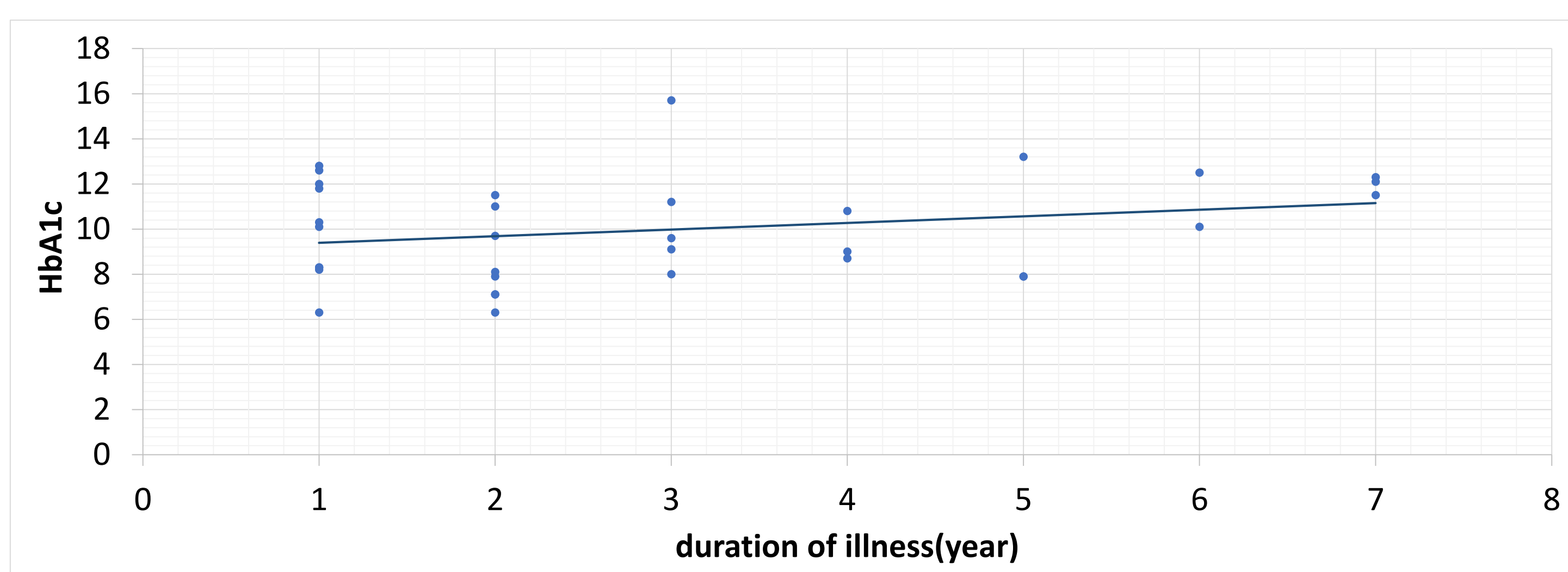


Figure 2. Association between Hb A1c and duration of illness(year)

Results:

34 patients included in the study. Nineteen (54.3%) were male, mean of age was 11.3 years old. Mean of duration of diabetes was 3 years, mean of thyroid stimulating hormone was 3.76mIU/L(SD:8.48), and mean A1c was 9.97(2.24) . Two male patients with high TSH level, 25 and 45 mIU/L, suffered from subclinical hypothyroidism. Association of duration of diabetes and thyroid stimulating hormone was $r_s = -0,068$; $p = 0,703$ ($p > 0,05$) and association of thyroid stimulating hormone and hemoglobine A1c was $r_s = -0,017$; $p = 0,925$ ($p > 0,05$).

Conclusion:

There wasn't any association between thyroid stimulating hormone and hemoglobin A1c in T1DM children.

Keywords:

Thyroid stimulating hormone, hemoglobin A1c, type 1 diabetes mellitus children.

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Poster Number : 115-P3

The Topic: Thyroid, 1st Author : Nur Rochmah

