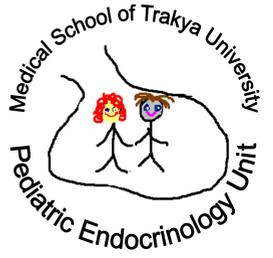




Clinical characteristics and laboratory findings at diagnosis of type 1 diabetes in children from the Northwest region of the Turkey



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OBJECTIVE: To describe the clinical characteristics at initial diagnosis of childhood type 1 diabetes mellitus (T1DM) in the Trakya region (Northwest region of the Turkey).

METHODS: The records of 315 children (161 males, 154 females) with newly diagnosed T1DM followed between March 2006 and March 2018 (12-year period) were evaluated retrospectively. The data were assessed by sex and age subgroups (<5, 6-10, and 11-18 years). Diabetic ketoacidosis (DKA) was defined as pH<7.30 or bicarbonate <15 mmol/L, and severe DKA as pH<7.10 or bicarbonate <5 mmol/L.

RESULTS: Mean age of children at diagnosis was 8.7±4.1 years. At the time of diagnosis, 29.2% of the children were aged 0-5 years, 37.5% were 6-10 years and 33.3% were 11-18 years. The patients presented most frequently in winter months (30.8%), and the lowest frequency (17.8%) occurred in summer (p<0.005). A first degree relative with T1DM was reported in 7.6% of the patients and a second or third degree relative with T1DM in 4.8% of the patients. Mean duration of symptoms was 26.2±34.3 days. The patients, who were diagnosed under the age of 5 years, had lowest duration of symptoms. The frequency of ketoacidosis was relatively high (62%) and 31.1 of them were severe DKA (0-5 years: 20.7%; 6-10 years: 15.3%; and 11-18 years: 14.3%; < 2 years: 38.1%). Mean blood glucose level was 430.7±152.7 mg/dl and mean glycated hemoglobin (HbA1c) level was 13.8±6.5%. Anti-thyroid antibodies were detected in 6.3% patients and anti-gliadin and anti-endomysial antibody positivity was 5.1%. All cases were euthyroid. Continuous subcutaneous insulin infusion was used in only 1 patient; and multiple daily insulin injection was began for the others.

Table 1. Clinical characteristics of patients with type 1 diabetes at diagnosis

Age at diagnosis	0-5 year	6-10 year	11-18
N (%)	92 (29.2)	118 (37.5)	105 (33.3)
Gender (Girls/Boys)	47/45	64/54	50/55
Clinical presentation at diagnosis of diabetes n (%)			
Hyperglycemia			
Ketosis	5 (5.4)	13 (11)	13 (12.4)
Ketoacidosis	30 (32.)	48 (40.7)	44 (41.9)
	57 (62)	57 (48.3)	48 (45.7)
Mean HbA1c%±SD	11.4±2.1	12.8±2.5	13.4±2.6
Hashimoto thyroiditis	1 (1.1)	8 (6.8)	11 (10.4)
Celiac disease	7 (7.6)	5 (4.2)	4 (3.8)

Conclusion:

DKA at the time of T1DM diagnosis in children and adolescents is frequent and often severe. High median HbA1c level indicate that disease was not recognized long before diagnosis. This data suggest that a public-health campaign to the early recognition of diabetes symptoms by patients relatives and physicians, can help to reduce DKA and related comorbidities, and this campaign should be continuous.