



Is There a Change in the Presentation of Childhood Type 1 Diabetes Mellitus in the Last 15 Years?: Data from a Tertiary Care Center in Turkey

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Saygın Abalı¹; Enes Çelik²; Belma Haliloğlu¹; Serpil Baş¹; Zeynep Atay¹; Serap Turan¹; Abdullah Bereket¹

Marmara University, ¹Pediatric Endocrinology, ² Department of Pediatrics
Istanbul, Turkey

Background

Studies assessing trends have shown that the incidence of Type 1 Diabetes Mellitus (T1DM) in children has increased in all over the world. At the same time, the age of T1DM onset in children has been decreasing^{1,2}. An inverse relationship has been reported between the frequency of a diabetic ketoacidosis (DKA) at diagnosis and incidence of T1DM^{3,4}.

Objective

To answer the question of whether the age of diabetes onset is shifting to younger ages and whether the rate of DKA at presentation has changed over the 15 years in children with T1DM.

Method

Patients with T1DM from a single center for Pediatric Endocrinology and Diabetes in Turkey since 1999 were included. In a period of 15 years, 517 patients (249 female) were divided into three groups due to the year of diabetes diagnosed.

(Group1: 1999-2003, n=75; Group2: 2004-2008, n=190; Group3: 2009-2013, n=252)

Results

The mean age of diabetes onset was 8.4 ± 4.1 years in the total cohort (range 0.6-17.7)

	Group 1 (1999-2003)	Group 2 (2004-2008)	Group 3 (2009-2013)	
Age (years) mean \pm SD	7.2 \pm 4.2	8.0 \pm 3.7	9.0 \pm 4.3	p:0.002
Patients diagnosed under 4 years of age % (n)	28.0 (21)	16.3 (31)	13.9 (35)	p:0.016

DKA and severe DKA rates at onset of diabetes (n=329) were 52.3% and 10.6%, respectively in the total cohort. There was no significant difference in DKA and severe DKA rates between three groups.

- The mean age of patients with DKA was younger than the patients without DKA (8.0 ± 4.0 vs 9.3 ± 4.2 , p=0.04).
- The mean age of the patients with severe DKA was 6.7 ± 3.5 years.
- There was a positive correlation between the age of onset of diabetes and HCO₃ level (r:0.222, p:<0.001).
- Diabetes onset < 4 years of age patients had HCO₃ level significantly lower than that of >4 years of age (11.7 ± 6.8 vs 15.1 ± 7.4 , respectively, p=0.002).

Conclusions

- ✓ We have not observed a decline in the average age of diabetes or the ratio of patients diagnosed <4 years of age in our cohort in 15 years
- ✓ Frequency of DKA at diagnosis in this study is similar to other centers in Turkey^{6,7}.
- ✓ Younger age at presentation with T1DM is associated with more severe acidosis.

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