The Frequency of Diabetic Ketoacidosis and Hyperglycemia in New Cases of Type 1 Diabetes Mellitus in Children Hospital of Qazvin City, Iran, during the Years 2006 to 2016

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Abstract Background: Type 1 diabetes mellitus (T1D) is the most common chronic endocrine-metabolic disorder of childhood and adolescence. Diabetic ketoacidosis (DKA) is one of the most important acute complications of T1D, and associated with significant morbidity and mortality. The aim of this study was to survey the frequency of DKA in new cases of T1D.

Methods: Data from 144 new cases of T1D admitted to the children hospital of Qazvin City, Iran, between 2006 and 2016 were reviewed. The studied variables included age, sex, new case of disease, season, place of living, family history of T1D, cause of admission, duration of hospitalization, recovery of DKA, blood glucose level, and arterial pH at admission. The data were collected using a questionnaire, and analyzed using SPSS software.

Findings: Out of 144 patients, 60.4% were girls. 84.3% of new patients admitted with DKA, and 15.7% with hyperglycemia. 24.7%, 24.6%, and 50.7% of patients were less than 5 years, 5 to 7 years, and ≥ 8 years, respectively. The highest incidence was in the autumn (31.6%). 11.9% of patients had a positive family history of T1D. The mean glucose level was 496.91 ± 154.38 mg/dl. Mean age at diagnosis was 7.38 ± 3.23 years. 2.5%, 28.0%, and 69.5% of patients had mild, moderate, and severe DKA, respectively. Mean days of hospitalization was 2.21 ± 7.54 days in ketoacidosis and 0.91 ± 4.66 in hyperglycemia, and the difference was significant ($P < 0.001$).

Conclusion: A greater incidence of DKA in the onset of the disease was due to insufficient awareness of families about diabetes mellitus.

Keywords: Diabetes mellitus, type 1; Diabetic ketoacidosis; Hypoglycemia; Child