

Initial presentation of subjects with Type 1 diabetes : a change in spectrum

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Introduction and Objectives

The classical presentation of type 1 diabetes mellitus is as diabetic ketoacidosis(DKA). This presentation is known to be different according to the age and ethnicity. As health awareness and access to healthcare improves, more subjects with type 1 diabetes are diagnosed early and present with less severe forms of hyperglycemia. India accounts for most of the children with type 1 diabetes in South East Asia, but studies on the initial presentation is lacking from India.

The objective of the study was to characterize the initial presentation of type 1 diabetes in India

Methods

All patients with clinical suspicion of Type 1 diabetes was included in the study. Patients with type 2 diabetes, pancreatic diabetes and suspected MODY were excluded. Patients with atypical presentation were confirmed to have islet autoimmunity with GAD antibody +/- IAA/ICA.. Data was collected by referring to previous discharge summaries and patient histories from file. The initial presentation of type 1 diabetes was classified arbitrarily into 4 types

Type A: Classical diabetic ketoacidosis (DKA) requiring admission (RBS >250, Ketone+ , acidosis documented and managed as inpatient)

Type B: Probable DKA: RBS >250, Ketone+, Acidosis (not documented) management similar to DKA

Type C: Severe hyperglycemia requiring admission (Incidental detection during other symptoms, acidosis and ketonemia not documented, managed with or without insulin infusion)

Type D: Hyperglycemia and / ketonuria managed as outpatient.

Descriptive statistics were used and SOFA (Open Source) was used for statistics.

Results and Conclusions

There were 102 patients in the group. Mean age: 11 years (0.7 – 30 years, 48M, 54F). Majority of the patients were diagnosed in the 6-12 age group (35, 34.5 %) followed by 13-18 years (27, 26.6 %), and 3-6 years (19, 18.7%). Equal number of subjects presented with Type A (classical DKA) (40, 39.2%) and Type D (hyperglycemia not requiring admission) (40, 39.2%). Overall 61 % of patients were admitted at diagnosis. In younger children (< 6 years), all children were admitted at diagnosis (Type A: 25, Type B: 1). In the older group (> 13 years), most patients were managed as outpatient (Type A : 1, Type D: 40) . More subjects diagnosed after 2010(including) were managed as outpatient. (43% vs. 33%)

Limitations of the study

The data of patients were gathered from available patient records and discharge summaries. Many of these were incomplete and the authors had to arbitrarily group them into categories of presentations A to D. By definition, there can be overlap of categories A, B and C. Hence we have tried grouping subjects into “ admitted” and “ managed as outpatient”. It is possible that patients with mild DKA may get classified as Type D and managed as out patient. Being a single center study in private care, it may be over – represented by more affordable subjects and hence higher possibility of early detection and subsequent OPD management. It is likely that subjects with more severe degrees of DKA may seek admission rather than outpatient care.

Discussion

DKA is the most devastating presentation of type 1 diabetes. Children initially presenting with DKA are prone to increased mortality, higher psychological morbidities and higher healthcare costs. [1] In a systematic review which looked at 29000 subjects across 31 countries, the initial presentation as DKA ranged from 12.8 % to 80 %. The highest incidence was found in Saudi Arabia and UAE and the lowest in Canada and Sweden[1] A study of DKA from Kuwait over a period 2000-2006 showed that less percentage of subjects presented with DKA in 2006 than in 2000. [2] Studies have shown that younger children with type 1 diabetes were more likely to present with DKA. [1,2]. In our series also, younger children were more likely to be hospitalized and more recently diagnosed children (> 2011) were less likely to be hospitalized.

Conflicts of interest : NONE

References

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