Clinical And Demographic Characteristics of Patients with Type 1 Diabetes Mellitus and correlation with risk factors: A South Indian Database

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Background: Type 1 Diabetes (T1DM) is one of the most common paediatric endocrine disorders in India, but diagnosis is often delayed. Moreover, systematized data about symptoms, presentation, management and follow-up of T1DM in India is lacking. Absence of such data makes formulation of uniform region and nationwide protocols for diagnosis, management and follow-up of T1DM patients difficult.

Objectives: To generate data about :

- Presentation and management of T1DM
- Identify risk factors for delayed diagnosis of T1DM
- Identify other chronic conditions associated with T1DM
- Focus on prevailing socio-economic factors which could have an impact on T1DM management.
- Compare this data with similar data from other regions of India and other middle income countries

Materials & Methods: A retrospective analysis of all children attending the pediatric endocrine unit at CARE Hospital, a tertiary level hospital from April 2014 to March 2016.

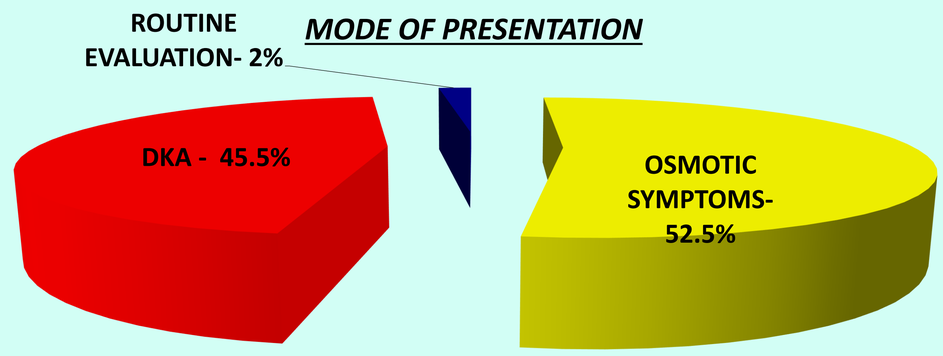
- Diagnosis of T1DM was made based on the World Health Organization criteria.
- Approval was obtained from the Ethics Committee of Care Hospital.
- The study included all the patients with Type 1 Diabetes who presented to the unit.
- Exclusion criteria: All children and adolescents with diabetes associated syndromes such as Wolcott–Rallison syndrome, DIDMOAD syndrome (Diabetes Insipidus, Diabetes Mellitus, Optic Atrophy, and Deafness), type 2 diabetes mellitus or other causes including cystic fibrosis related diabetes (CFRD), steroid induced diabetes and lipodystrophy were excluded.
- Children with first diagnosis of diabetes aged less than 9 months were also excluded in view of a possible monogenic diabetes.

Methodology:

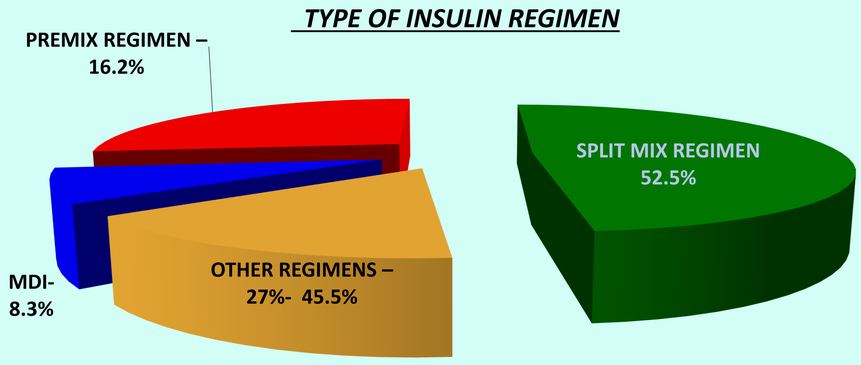
- Data including demographic, clinical and laboratory details to the extent possible were collected from the patients' records including electronic, physical and parent recall.
- This data was captured in a structured manner using a questionnaire that comprised of history of osmotic symptoms, diabetic ketoacidosis (DKA), other autoimmune disorders, family history of T1DM, and current insulin therapy, season of diagnosis, duration of hospitalization and socio-economic data of patients.
- Data on current insulin therapy included the type of regimen, dose, frequency of dosing, type of insulin and frequency of self monitoring of blood glucose.
- Examination included anthropometry, waist height ratio and waist circumference measurement, evaluation for goitre and other evidence of autoimmunity, puberty status and evidence of lipodystrophy

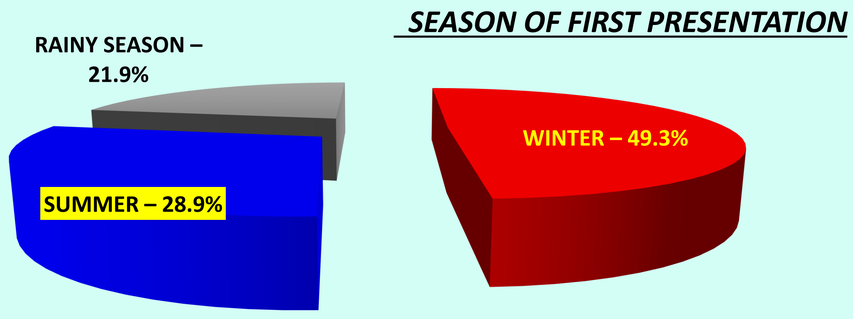
Results: Demographic data is as follows:

CHARACTERISTIC	DESCRIPTION
Total number(n)	221
• Female • Male	118 103
Mean Age of Presentation	9.2 ± 4.3 years.



CHARACTERISTIC	DESCRIPTION
Symptoms/ Findings	
• POLYURIA	95.7%
• WEIGHT LOSS	80.3%
• RAPID BREATHING	77.3%
• NOCTURNAL ENURESIS	55.9%
Associated autoimmune disorders	
• HYPOTHYROIDISM	8.1%
AVERAGE HOSPITAL STAY	17 ± 5.5 DAYS





CONCLUSIONS:

- Osmotic symptoms have supplanted DKA as the commonest mode of presentation.
- Misdiagnosis and delay in diagnosis have become very rare in the more recent T1DM cases, since blood glucose measurement is now standard of care for every sick patient.
- Winter is the commonest season for initial presentation.
- Split mix regimen has become more acceptable and is now preferred over twice a day premix.
- *There does not seem to be any gender bias in the diagnosis and management of T1DM.*
- Number of days of hospitalization is still much higher when compared to the West.

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