Differences in Multi-Disciplinary Team Management of Children and Adolescents with Type 1 Diabetes Across Different International Sites: An Exploratory Pilot Study

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Background

- The American Diabetes Association (ADA) and International Society for Pediatric and Adolescent Diabetes (ISPAD) recommend achieving an HbA1c<7% in patients with type 1 diabetes (T1D).
- HbA1c levels remain well above the targets; peaking to >9% in 17-year-olds.
- Differences in average HbA1c exist across countries and clinics for youth with T1D which are not completely explained by differences in access to diabetes-management technology nor sociodemographic characteristics of patient populations.
- Delivery of health care may be an important factor in the geographic variance seen in clinical outcomes.

Aims

- Describe the structure of clinics who treats pediatric patient with TID diabetes across different international sites.
- Identify similarities and differences related to patient outcomes as measured by mean HbA1C.
- Explore the roles and approach to delivering diabetes education and support.

Methods

- Study design: Retrospective, descriptive
- Inclusion criteria:
  - Nine international pediatric diabetes clinics including sites in the US, Australia, Sweden, India, and China
  - Pediatric population ≤ 19 years old with T1D
  - Data collection from a one-year period

Methods

Quantitative data:

- Using an online structural questionnaire from each site
- Data collected in the questionnaire included: HbA1C, frequency and pattern of type 1 diabetes care and education and treatment characteristics (usage of insulin pump and CGM)

Qualitative interviews:

- Two pediatric endocrinologists and three to eight medical professionals at each site, with a 45-90 participants in total

Anticipated Results/Expected Outcomes

- Table (1) Clinics in the study reporting HbA1c.

	Clinic 1	Clinic 2	Clinic 3	Clinic 4	Clinic 5	Clinic 6	Clinic 7	Clinic 8	Clinic 9
Mean HbA1c	<7.5%	<7.5%	>7.5%	>7.5%	>7.5%	>7.5%	>7.5%	>7.5%	>7.5%
Reference range (<7.5%)									

- Two sites are reporting average HbA1c levels below 7.5%.
- Data obtained form one site and further data is being collected on the remaining sites.
- Interviews completed from three sites and further interviews with medical professionals will be conducted to explore the content of education and structure of patient education at diagnosis and beyond.

- Table (2) lists some of the key questions to explore clinic characteristics and the approach to patient care.

Characteristic	Clinic 1
HbA1c by age (%)	6.9%
0 - 4 y	6.45
5 -9 y	6.7%
10-14 y	7.1
15-19y	7.5
20 y	
Providers (n)	
Ped Endocrinologist	5
Certified Diabetes Educator	4
Registered Dietitian	3
Social Worker	1
Psychologist	0
Total number of TID seen over a year	366
No of admission at diagnosis (youth) (%)	76-100%
Average length of stay- initial diagnosis (n)	4 nights or more
Diabetes education protocol during the 1st year	No
Insulin pump users(%)	50%
Criteria for insulin pump	No
CGM (%)	60%
HbA1c targets by age (%)	6.5
Time spent in hypoglycemia by age	0
Education protocol for DKA or severe hypoglycemia?	yes

Discussion

- We present an ongoing exploratory pilot study to describe clinic level demographics and processes related to T1D patient education and care delivery across nine international pediatric diabetes clinics.
- We anticipate differences among the structure and approach of various clinics caring for children and adolescents with T1D that could potentially explain the different outcomes.
- We expect variation in the perspectives of medical professionals regarding hypoglycemia, lifestyle modifications, patient ability to meet targets, family communication and teamwork, multi-disciplinary communication and teamwork across clinical roles within and between centers.
- Findings from this study will lay the groundwork for future collaborative studies, including more analyses of these differences that may help understand varying patient outcomes and potentially improve care overall

Summary

- This is an ongoing study for comparison of a real world practices in T1D across nine pediatric endocrinology international clinics.
- This study is expected to provide informative data and a rigorous understanding of clinical practices across major international centers serving children and adolescents with T1D

References

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Footnotes

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