

Characteristics of newly diagnosed children with Type 1 diabetes - DKA versus Non- DKA presentation

Sarrah El Munshid¹, Saji Alexander¹, Karen Spowart¹, Karen Logan², Kingi Aminu¹, Nicola Bridges¹

¹Department of Paediatric Diabetes and Endocrinology, Chelsea and Westminster Hospital NHS Foundation Trust
² Imperial College, London

BACKGROUND

Diabetic Ketoacidosis (DKA) is a common presentation of newly diagnosed Type 1 Diabetes

There is a world wide variation in the rate of DKA as first presentation of Type 1 diabetes of 16% to 67%.

In the UK average frequency of DKA as first presentation is 25%.

DKA is a leading cause of mortality in children with type 1 diabetes

AIMS / OBJECTIVES

To compare the demographic and clinical characteristics of DKA versus non-DKA presentations in children <16 years at diagnosis of T1DM.

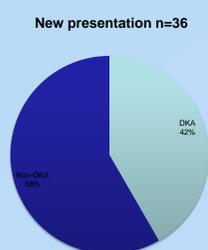
Compare newly diagnosed children with T1DM presenting with DKA versus Non – DKA to determine risk factors for DKA

METHOD

Retrospective audit covering a 30 month period; from January 2013 to June 2015 in a single paediatric diabetes unit.

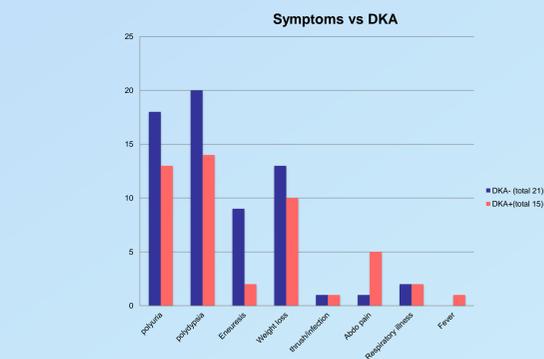
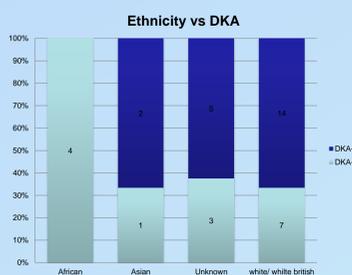
Results

- Total number of new T1DM cases: 36
- DKA presentation :15 (42%)
- Non DKA presentation:21 (58%)



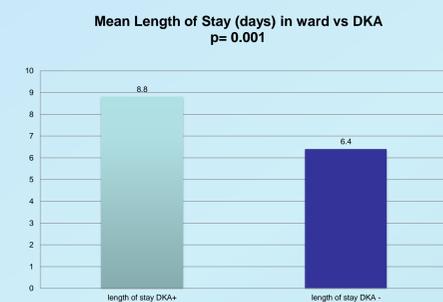
Ethnicity

- 59% were white British
- 100% of children with African ethnicity presented in DKA
- compared to 33% of White British ethnicity (p=0.0261)



Length of stay

Length of stay was longer in DKA+ (8.8 days; range 5-14) compared to DKA- (6.4 days ; range 4-9) (p=0.001)



Background data

Sex

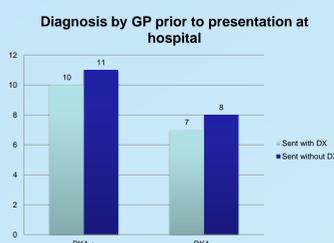
- Females 56%; males 44%
- Median age was 8 years
- 40% presented in mild DKA, 33% presented in moderate DKA, and 20% presented in severe DKA
- 40% of males presented in DKA versus 43% of females

Age

- Peak age of diagnosis- 6 years
- 100% of children at 2 years presented in DKA
- There was a trend for younger children to present in DKA
 - 66% of those aged 0-5 years presented in DKA compared to 29% and 46% in 5-9 years and 10-16 years respectively

Place of diagnosis

- More children were diagnosed in hospital rather than by the referring GP



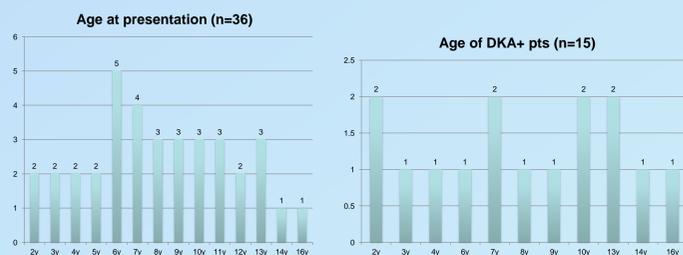
Presentation

- Commonest symptoms were polydipsia (93%), polyuria (86%), and weight loss (66%) and were similar in both groups.
- Abdominal pain which was more common in the DKA+ group (33% vs 4.7%), (p=0.059)

Miscellaneous

There was a family history of Type 1 diabetes in 19% of children

DKA presentation peaked during winter
There was higher Glucose reading, HbA1c, among DKA+ compared to DKA- Children



CONCLUSIONS

- Rate of DKA at presentation of T1DM in our patients was higher than that reported in the literature.
- DKA was more common in the Younger age group and African ethnicity
- Cluster of symptoms were similar but abdominal pain was more common in DKA
- Length of stay was significantly longer in patients with DKA
- More patients were diagnosed in hospital than in primary care
- There is a need to increase awareness among the public and primary care health professionals to aid early diagnosis and reduce the burden of DKA.