Factors influencing Type 1 diabetes control in children – a detailed local analysis of an NPDA dataset

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BACKGROUND
National Paediatric Diabetes Audit (NPDA) provides comparative data for local paediatric diabetes units (PDUs) on key care processes and overall HbA1c. More detailed analysis on other variables affecting HbA1c is undertaken at a national level, but not at an individual PDU level.

OBJECTIVE
To determine the factors influencing glycaemic control (HbA1c levels) in young children and adolescents with Type 1 Diabetes Mellitus (T1DM)

METHODS
Retrospective analysis of the local data collected for the NPDA 2014-15 in a medium sized PDU. Data was analysed using the SPSS statistical package.

RESULTS

Duration of diabetes and HbA1C
- The mean HbA1c was significantly higher for those who had T1DM for >5 years (74.5±19.6) compared to those with a duration <5 years (67.0±18.5) (p = 0.01). (Fig4)

Insulin therapy and HbA1C
- Those on pump therapy (64.1±12.9) had lower HbA1c levels than those on MDI (72.8±20.5)(p=0.003). (Fig5)

Miscellaneous
- Age at first diagnosis and number of clinic visits per year did not seem to affect HbA1c.
- ‘overweight’ or ‘obese’ children tend to have a higher HbA1c than those who have normal BMI (p=0.3).

CONCLUSIONS
Older children especially adolescents, black ethnic origin and a longer duration of diabetes adversely affect T1DM control and HbA1c. Those on insulin pump therapy had an improved control. Targeted measures to improve management in these at-risk groups, at a local level, are imperative. Careful analysis of NPDA data at a PDU level is a useful exercise to determine local priorities.