ESPE DUBLIN
18-20 September 2014
53rd Annual Meeting

Metabolic control in a pediatric population with type 1 diabetes mellitus

Joana Verdelho Andrade, MD, Clara Gomes, MD, Conceição Luís, RN, Gabriela Laranjo, MD, Joana Campos, MD
Hospital Center Tondela-Viseu, EPE
Portugal

Background

Type 1 diabetes mellitus (T1DM) is one of the most frequent chronic diseases in childhood and adolescence. Poor metabolic control is associated with numerous and onerous consequences. Glycated hemoglobin (HbA1c) levels are important in the assessment and monitoring of metabolic control in T1DM. Therefore, it is essential to know the causes of its variability.

Objectives

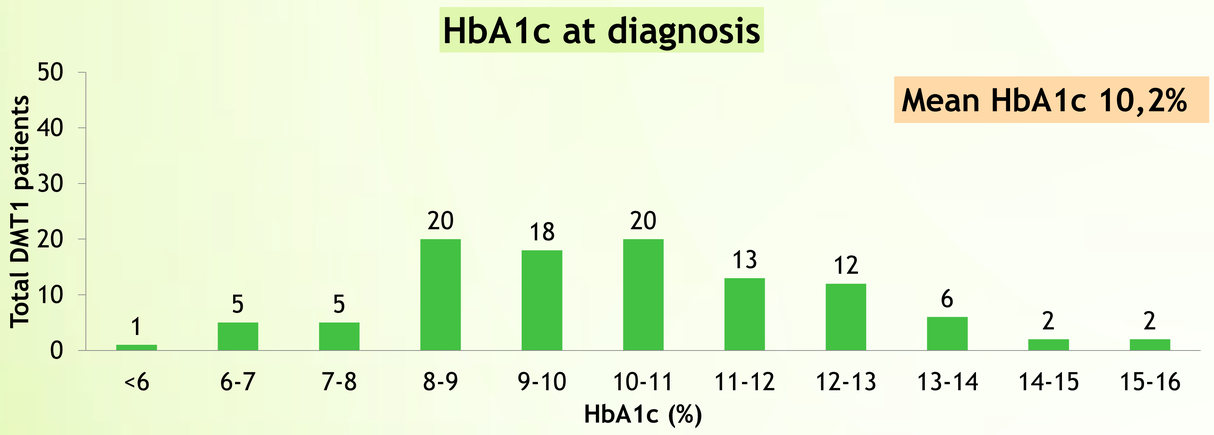
Determine the impact of age and time of disease in the value of HbA1c in children and adolescents with T1DM, as well as appreciate the relationship between HbA1c/dyslipidemia and HbA1c/microalbuminuria.

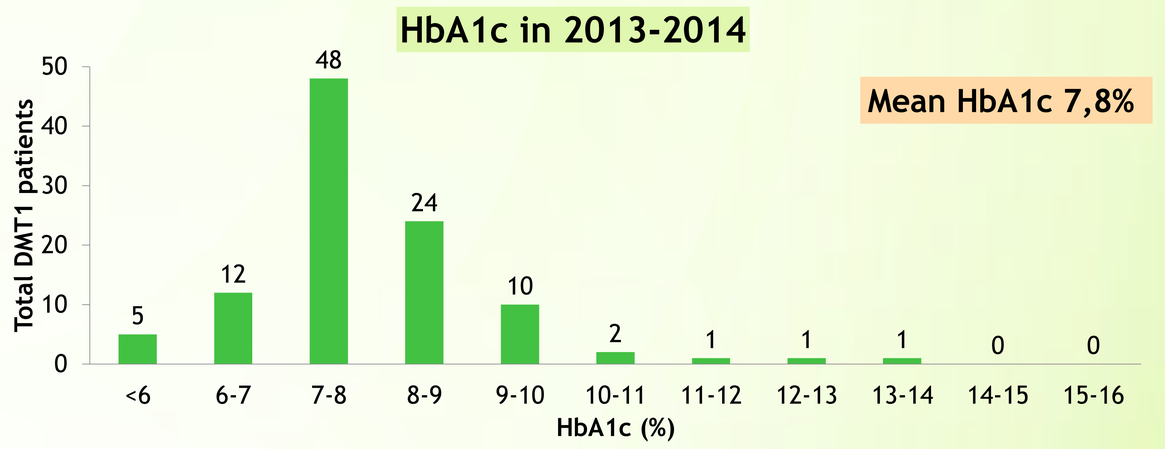
Method

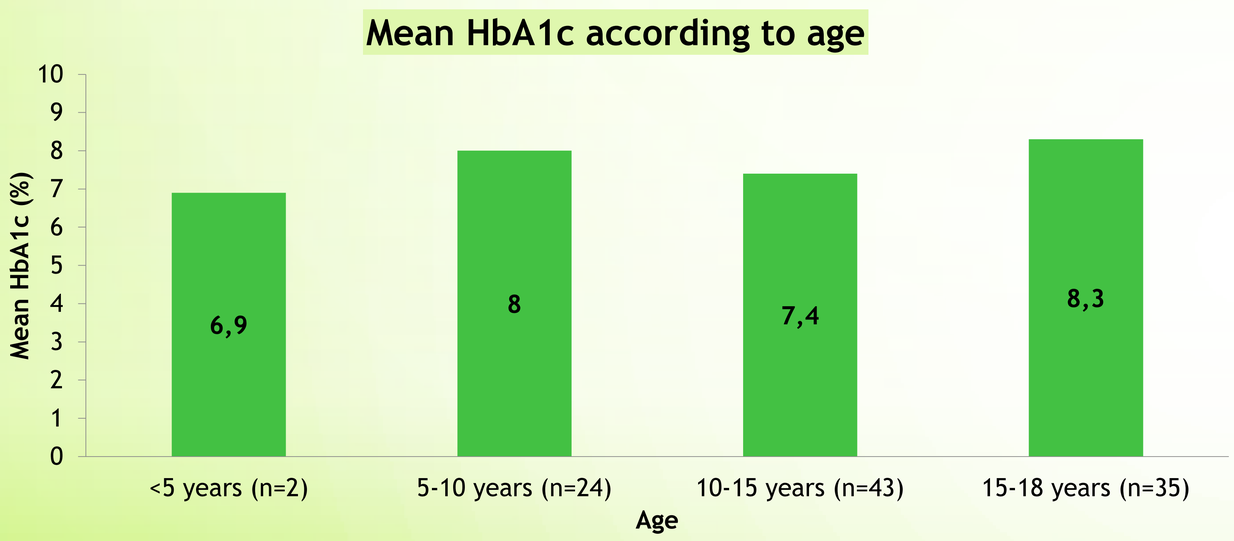
We designed an observational, transversal, and retrospective analysis of a pediatric population with T1DM followed in a Pediatric Diabetic outpatient department in a Tertiary Hospital in Portugal. The studied variables were: gender, age, age at diagnosis, metabolic control and metabolic complications.

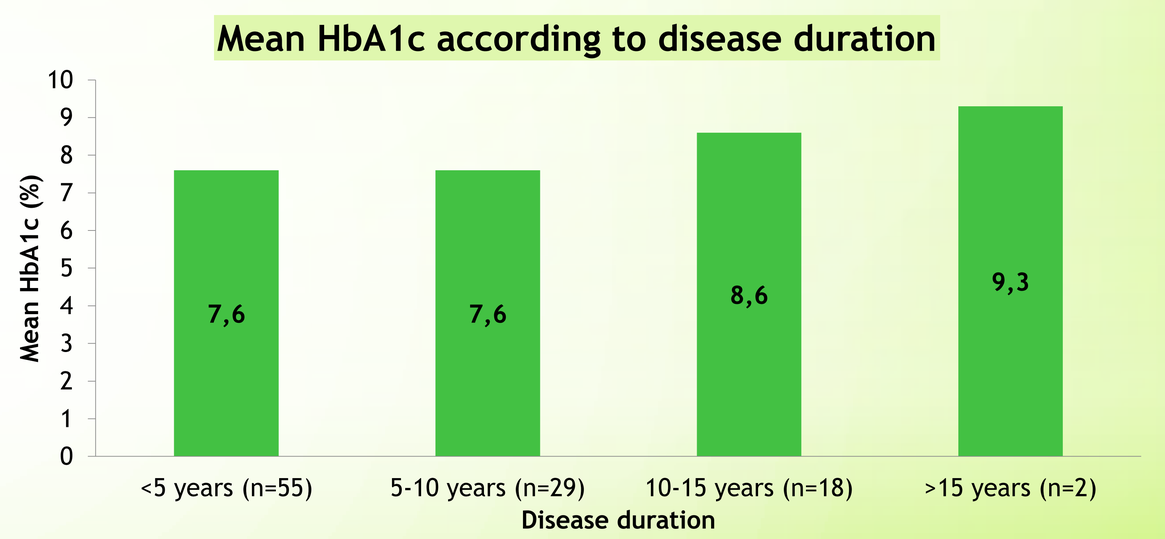
Results

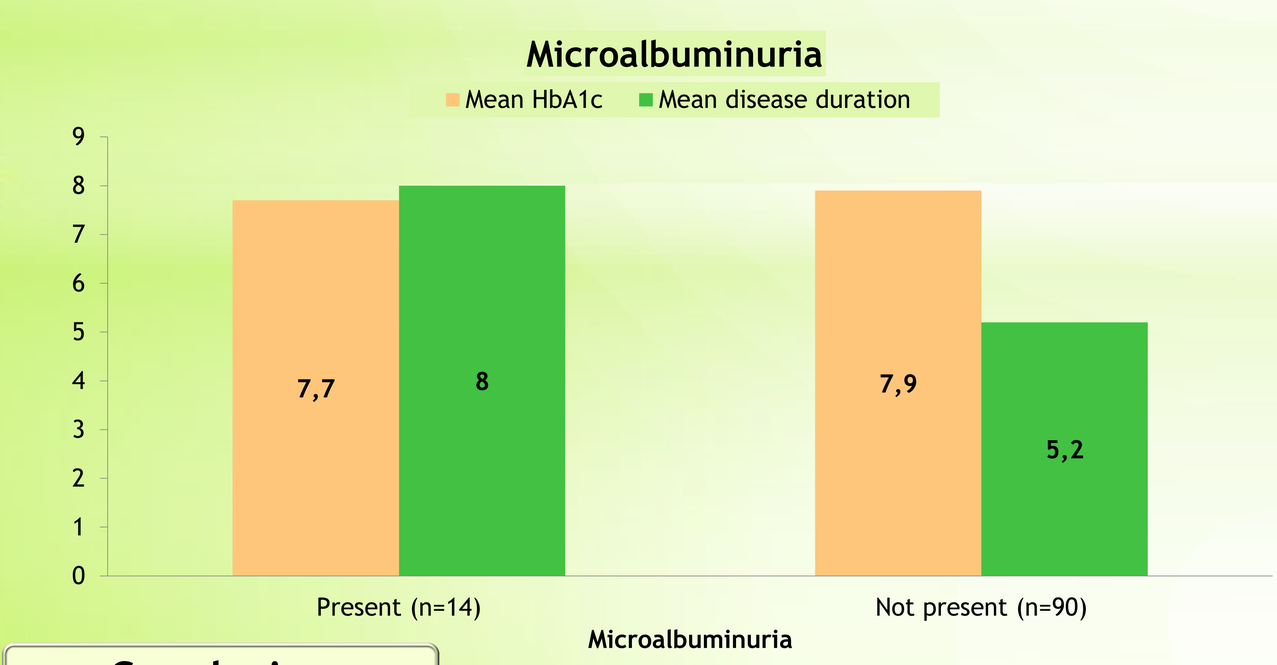
Our population consisted of 104 T1DM patients (47.1% female, 52.9% male) with a median age of 12.5 years (3.3-17.9 years). The HbA1c mean value in the last year was 7.8% (less than 7.5% in 43.3%). We realized that adolescents' HbA1c was not higher than in children (7.8% vs. 7.9%). Patients with T1DM duration of disease higher than 5 years had greater HbA1c values (8% vs. 7.7%). 13.5% (n=14) of patients had microalbuminuria and 12.5% (n=13) had dyslipidemia. Besides, those with microalbuminuria did not had higher values of HbA1c (7.7% vs. 7.9%) and the values were not significantly different in patients with or without dyslipidemia (7.8% vs. 7.9%).

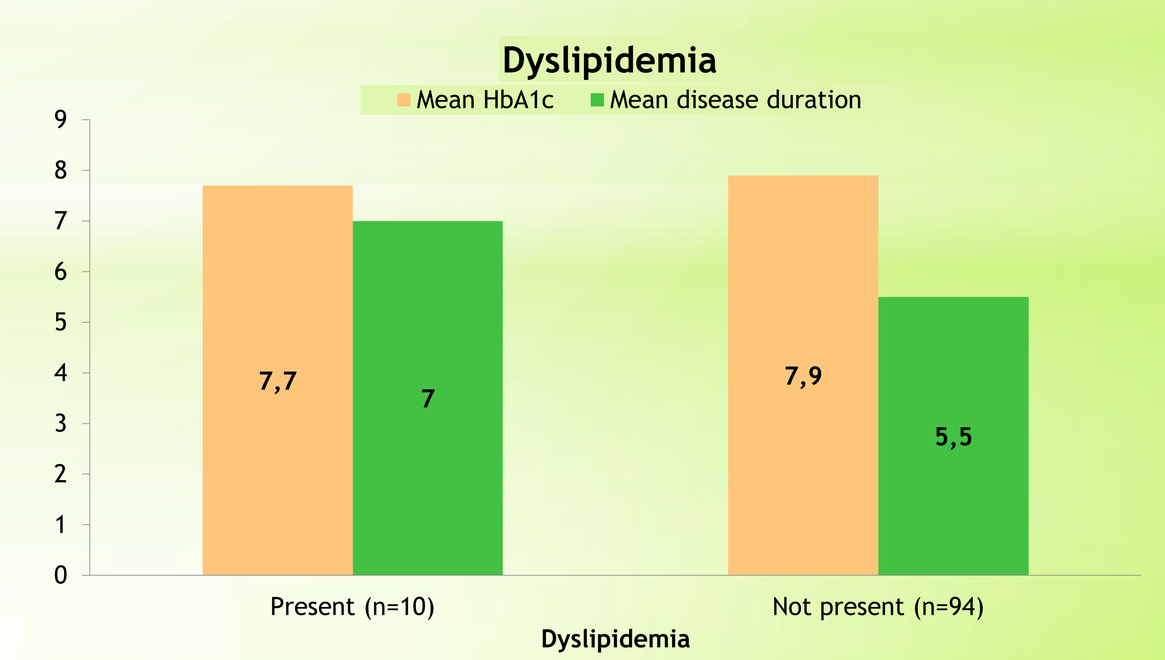












Conclusion

Similar to other studies, we confirmed that mean HbA1c level was significantly higher in patients with longer diabetes duration and in the pubertal group[3]. This might have resulted from increased insulin resistance and impaired compliance with treatment in puberty. T1DM is an important risk factor for dyslipidemia and cardiovascular diseases[7]. We verified that the consequences of a poor metabolic control, like microalbuminuria and dyslipidemia, can occur even at pediatric age.

References

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