Inaugural ketoacidosis about 110 Algerian patients

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Main objective

To assess the risk factors for inaugural diabetic ketoacidosis (ACDI) and its severity (ACDIs) in children with type 1 diabetes

Materials and Methods

This is a descriptive and analytical cross-sectional study with prospective recruitment Over a period of one year, 110 patients aged 1 to 16 years old who were diagnosed with type 1 diabetes in pediatric emergencies Age, gender, family socioeconomic status, symptoms and their duration, patient pathway to diagnosis, clinical and biological signs at diagnosis, and family history of T1D were collected for each newly diagnosed patient. Diabetic ketoacidosis (DKA) was defined according to the ISPAD 2018 definition with pH <7.30 or bicarbonate < 15 mmol/L, and severe ketoacidosis by pH < 7.10 or bicarbonate < 5 mmol/L.

Results

At the time of diagnosis, 15.5% of children were aged 0 to 2 years, 24.5% from 2-5 years and 32.7% from 6-10 years and 27.3% from 10-16 years. The overall prevalence of ACD was 50.9%. DKA was severe in 57.1% and mild or moderate in 42.9% DKA was globally more frequent in younger children $p=0.013$ however no age interval had any impact on the occurrence of ACDI $p=0.09$ nor in its severity $p=0.2181$, patients with poor economic conditions, parents without profession were more likely to present ACDI respectively $p=0.001$, $p=0.0187$ and p 0.0172

A longer consultation and hospitalization period resulted in more ACDI $p=0.000$ and $p=0.0011$ respectively, the diagnostic error was responsible for DKA in 76.8% of patients versus 21.2% of patients without ACDI $p=0.0001$, asthenic and febrile patients with weight loss were more likely to present at the ACDI stage respectively $p=0.00$, $p=0.03$, $p=0.00$ On the other hand Patients with enuresis presented more at the ACDIs stage.

Vomiting with a shorter duration of evolution was predictive of ACDS, on admission the patients who presented to ACDI had a greater weight loss $p=0.00$, a DHA $p=0.00$ and a more deteriorated neurological status $p=0000$ and a Higher BMI $p=0.00$ versus patients without ACD this was also valid for ACDS, the metabolic state of patients on admission, in particular for HB1c, was significantly higher both in diabetic

children in ACDI and in ACDIs respectively p=0. 00 and p=0.0417, the presence of AI2 AND IAC were predictive of ACDI, the history of DTI alone or associated with T2DM was more present in patients wit

The multivariate analysis

showed that a modest financial situation of the family, a consultation period between 15-30 days, a duration of evolution of the enuresis of more than 15 days, the presence of asthenia and fever and abdominal pain before the 1st consultation, DHA regardless of its severity, weight loss greater than 5%, on admission, The presence of ACanti IA2 and IAC are risk factors for ACDI, on the other hand , the presence of ATCD of DT1 or DT1+DT2 and a higher BMI were protective of ACDI however massive ketonuria A 4+ A disturbing neurological examination are risk factors severe ACDI

Conclusion

our study demonstrated the responsibility of the parents both in the occurrence of CIDA by delaying the consultation and their protective action in the event of knowledge in diabetes and in the presence of a history of diabetes in the family on the one hand and the doctor's responsibility in case of misdiagnosis a fortiori when patients have socio-economic conditions with a limited educational level and therefore awareness campaigns for an early diagnosis of diabetes mellitus are necessary targeting parents and doctors in the aim to reduce the frequency of ACDI and ACDIs which remains the leading cause of death in type 1 diabetes in children.