Case report : Fasting C-Peptide, A useful tool for diagnosis of Type II Diabetes Mellitus in overweight / obese adolescents living in a poor resources setting.

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INTRODUCTION

Obesity is associated with the development of serious metabolic comorbidities including premature cardiovascular disease and type 2 diabetes mellitus (T2DM). Our objective is to present two cases of type 2 diabetes mellitus previously taken as type 1 diabetes mellitus in obese adolescents. The evaluation and management are discussed.

CASE PRESENTATION

Two (02) adolescent girls (aged 18 year old to date), were diagnosed Type 1 DM at 10 and 18 year of age respectively, poorly controlled on intermediate and regular insulin (HbA1c of 15% and 13.2%). There was a family history of Diabetes mellitus in one of the adolescent. Both of them are overweight and obese respectively and had signs of insulin resistance (acanthosis nigricans and stage II high blood pressure). The laboratory test revealed dyslipidemia, the fasting C-peptide was within the normal range. The management plan consisted on lifestyle modification and medications made of metformin associated with intermediate acting insulin at 0.3UI/kg/day. 3 months after starting the treatment, we noticed a decrease in HbA1C level (9% and 7%), weight loss, reduced blood pressure, and the improvement of the blood glucose. From these 2 cases, if they were T1 DM patients despite their weight, we should have expected to have a low fasting C-peptide. Both patients had acanthosis nigricans and metabolic syndrome in one of them but the C-peptide was within the normal range, meaning that their pancreas still producing insulin, but it doesn't work properly because of resistance (adipose tissue).

CONCLUSION

In the presence of signs of insulin resistance and obesity in a supposed T1DM patient, the fasting C-peptide can be useful to make the diagnosis of T2DM more probable. The management of this condition consists on lifestyle changes and medication (insulin and metformin).

KEYWORDS

Type 1 diabetes mellitus, Type II Diabetes Mellitus, insulin resistance, metabolic syndrome, dyslipidemia, self-monitoring blood glucose, Fasting C-Peptide.

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