**Type 2 Diabetes in a Nigerian Adolescent: Diagnostic and Management Challenges in a Resource Poor Setting**

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**Abstract**

Type 2 diabetes in children and adolescents is an emerging clinical problem globally in the last three decades. Previously it was thought that type 2 DM does not affect children and adolescents. There is need for high index of suspicion especially in obese children and adolescents who have positive family history of type 2 diabetes. We present a case of a newly diagnosed type 2 DM in a female adolescent previously thought to have type 1 DM. She presented with weight loss, polyuria, polydipsia and polyphagia. She had a positive family history of type 2 DM. She was previously managed as Type 1 DM but when hyperglycaemia was not responding to insulin therapy and fasting serum C-Peptide was within normal limit, a diagnosis of type 2 DM was made and she has since been doing well on oral hypoglycaemic agent.

**Keywords:** Type 2 Diabetes, adolescents, Diagnosis, Challenges, Resource-Poor Setting

**Introduction**

Diabetes mellitus is a group of metabolic disorder characterized by hyperglycaemia, resulting from defects in insulin secretion, inaction or both. Type 2 DM has heterogeneous etiology with social, behavioral and environmental risk factors unmasking the effect of genetic susceptibility. The hallmark of type 2 DM is obesity.2 Previously thought to be a rare disorder in children and adolescents, researchers began to report increasing incidence of type 2 DM among Paediatrics age groups in the last three decades worldwide.3 This observation followed increased prevalence of obesity among children and adolescents globally.4,5 Overweight is presently becoming a major health challenge among Paediatrics age group in both developed and developing countries.5,6 Often there is family history of type 2 DM in first degree relatives among 74% – 100% of children and adolescent having type 2 DM.2 There is paucity of data on type 2 DM among African children and adolescents whereas the prevalence of childhood and adolescent type 2 DM in the United State7 is 12:100000 and in Europe8 2.5:100000

**Case Report**

We report the case of newly diagnosed type 2 diabetes in a 12 year old girl who presented at a private hospital owned by a Paediatric Endocrinologist in Ekiti State, South West, Nigeria.

She was referred from another private hospital where she was noticed to have high blood glucose with difficulty controlling the blood glucose with subcutaneous insulin. She presented with 3 month history of excessive thirst, excessive hunger, frequent urination and weight loss. Body weight before illness was greater than 70 kg (obese; >95th percentile for age and sex) but at presentation she was weighing 54kg (between 75th & 90th percentile). Her mother is diabetic (Type 2 DM). There was no history of autoimmune diseases in the family. She was the 3rd of three children in a monogamous family setting. Elder siblings (23 year old male and 19 year old female were alive and well). Her father was a 50 year old business man, while mother was a 50 year old business woman.

Essential findings at presentation were: not acutely ill looking girl, afebrile (36.3°C), no sign of dehydration, no acanthosis nigrican. She had a low normal pulse rate of 86/min and BP of 90/50, normal heart sounds, sexual maturity rating stage II for both breasts and pubic hair. She was conscious and alert, well oriented in time, place and person.

RBG= 21.8mmol/L, blood ketone +++, urinalysis: glucose +++, protein nil, pH 5.0.
Type 2 DM can be asymptomatic in the mildest form when it can be detected by routine fasting blood glucose12, 13 and urinalysis in at risk group (obese adolescents with family history of type 2 DM, and acanthosis negrican, a sign of insulin resistance).2 And in the severe form patients presents with classical symptoms of weight loss, polyuria, polyphagia, polydipsia like index patient. Treatment of type 2 DM in children and adolescents is mainly by lifestyle modification, exercise and use of oral hypoglycemic agent (Metformin)13, 14 which also has additional benefit of weight reduction and decrease in lipids without risk of hypoglycemia.13 Our index patient has remained euglycemic and clinically stable on Metformin and lifestyle modification. Subcutaneous insulin may also be indicated if hyperglycaemia persists.13 Emphasis must however be on prevention especially in resource poor countries with limited resources for early diagnosis, treatment and management of complications.

References


