

**High occurrence of diabetic ketoacidosis among type 2 African patients.**

Sir,

Eighty years after the discovery of insulin, diabetic ketoacidosis (DKA) still remains the common medical emergency in African countries. Poor compliance with diabetes therapy, diet, infections and lack of health education are the major precipitating factors. Type 2 diabetes is not a mild disease as is sometimes thought, but carries considerable morbidity and mortality. The prevalence of this disease continues to rise in African countries probably due to wide-spreading urbanization and changes of life style.<sup>1</sup> Although DKA is classically associated with Type 1 diabetes, the majority of the African patients have Type 2 diabetes.<sup>1</sup> In Sudan, in recent years, figures as high as 58% and 37.7% were reported.<sup>2</sup> The occurrence of DKA among adult diabetic patients is not as rare as once thought. Of course, there are possibilities that some of the patients labeled as Type 2 may actually have adult-onset insulin-requiring diabetes. Moreover, DKA can be the first presentation for Type 2 patients and may indicate a rapid development of the disease. Some patients who appear to have Type 2 diabetes may actually have a slow progressive form of Type 1 diabetes as evidenced by the presence of islet-cell antibodies and eventually they become dependent on insulin. They show a progressive worsening of diabetic control if treated with diet or oral hypoglycemic agents (OHAS). The OHAS may give only temporary relief and fail to protect the beta-cell from the gradual destruction. The American Diabetes Association has defined this type of diabetes as LADA (Late Autoimmune Diabetes of Adults).<sup>3</sup> It is a worldwide decision that the type of diabetes should be made largely on clinical grounds. It is not routine practice to measure insulin level, C-peptide level or anti-GAD antibody to perform glucagon stimulation test. It has been reported that the excessive intake of sugar-containing drinks results in DKA in adult patients with Type 2 diabetes.<sup>4</sup> High intake of such fluids is common practice among our diabetic patients especially at times of infections accompanied by mild nausea or vomiting (to

counteract presumed hypoglycemia!).<sup>2</sup> Diabetic patients in this situation also tend to stop their therapies altogether.<sup>2</sup> Some researchers defined several associations linking DKA to Type 2 diabetes. These include male sex, alcohol abuse, abnormal body mass index and old age.<sup>5</sup> In particular the elderly are expected to develop DKA in response to acute stress such as myocardial infarction, infections or stroke. These factors need to be extensively studied in African patients. The factors that push the Type 1 patients into DKA also come into play in Type 2 African patients. The absence of guidelines concerning the diagnosis and treatment of DKA may lead to mishandling of such patients. For example, failure to recognize the early signs of DKA may lead to an increase both in morbidity and mortality. The role of the complex of ignorance, poverty and tropical infection in DKA precipitation is beyond doubt. The clinical stereotype that divides diabetics into thin, insulin requiring, and obese and not needing insulin patients can be misleading in African diabetics. Increasing numbers of Type 2 patients present with ketoacidosis requiring insulin treatment (not necessary for their entire life). New innovations in our medical research are needed to address this issue.

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*References*

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