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**Type 1 diabetes mellitus among children aged 5-17, years at Muhimbili national hospital,  
Dar es Salaam: complications and socio-economic burden.**

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The natural history of type 1 DM is the development of serious complications. They include hypoglycemia, hyperglycemia, diabetic ketoacidosis (DKA), retinopathy, nephropathy, neuropathy, and atheroma of large vessels as well as growth impairment. Complications and Diabetes itself as a disease imposes a burden to the patient and his/her family.

#### Objective

To determine the complications of type 1 diabetes in children aged 5-17 years and socio-economic burden encountered by the children's families in Dar es Salaam. Study design

Cross sectional descriptive study.

#### Study setting

The study was conducted at the Diabetic clinic of Muhimbili National Hospital, Dar es Salaam, Tanzania from June 2005 to February 2006.

#### Subjects

A total of 99 children aged 5 to 17 years were recruited into the study.

#### Methodology

The investigator invited all type 1 diabetic children who met the inclusion criteria as they came to the clinic and those children whose parents/guardians granted informed consent to participate in the study were recruited. Then a complete clinical assessment was carried out which included taking a complete history and a thorough physical examination as well as taking blood samples for random blood glucose (RBG), glycosylated haemoglobin (HbA<sub>1c</sub>) and lipid profile. Data was collected using a structured questionnaire. Analysis was done by Epi info version 3.22 and spss version 11.5 computer programmes.

#### Results

Ninety nine children were recruited in the study. Among these 57 (56.4%) were females and 42 (45.92%) were males. Mean age was 13.34±3.56. Only one child (1.1%) had adequate glycaemic control. 56 (56.6%) children had moderate glycaemic control and 42 (42.4%) had poor glycaemic

control. DKA and hypoglycemia presented in 89 (89.80%) and 55 (55.67%) respectively. The common chronic complication found was growth impairment 67 (67.7%), followed by neuropathy 33 (33.67%) and nephropathy 30 (30.61%). Retinopathy was found in 22 children (22.6S%). Most families with children attending the diabetic clinic had a heavy socio-economic burden in terms of the cost for caring for their children.

#### Conclusions and Recommendations

DKA and hypoglycaemia were the commonest acute complications found in this study. These complications were also commonly associated with irregular clinic attendance for follow-up visits, non-adherence to insulin regimens and poor glycaemic control. They occurred most commonly in the young age. Families with children suffering from diabetes do experience heavy socio-economic burden. It is recommended that children with type 1 diabetes should have regular clinic follow up visits (Once even two weeks) so as to promote education and adherence to the treatment plan, and in so doing try to ensure good glycaemic ultimately reduce the incidence of acute complications as well as long-term sequelae of diabetes mellitus. The children should also be given access to free or subsidized treatment in particular insulin supply.