

Determinants of outcome of children with type 1 diabetes in Cameroon

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Background and Objectives:

In sub-Saharan Africa, the prognosis of children with type 1 diabetes is poor. Many are not diagnosed and those diagnosed have a dramatically reduced life expectancy (less than one year). This study sets out to identify the predictors of outcome in children and adolescents with type 1 diabetes.

Methods:

A hospital based cross-sectional study involving 76 children/adolescents (35 boys and 41 girls, mean age 15.1 ± 3.1 years) with type 1 diabetes included in the “Changing Diabetes in Children” (CDiC) Programme and attending the clinics for children living with type 1 diabetes in the North West Region of Cameroon. Data on glycosylated haemoglobin (HbA1c) was obtained from the hospital records of participants. Socio-demographic characteristics and diabetes-related practices were obtained from participants using a structured questionnaire. Odds ratios (OR) were calculated using logistic regression models to assess the association between determinants and good glycaemic control.

Results:

The study population had a mean HbA1c of 10.3 ± 2.9%.

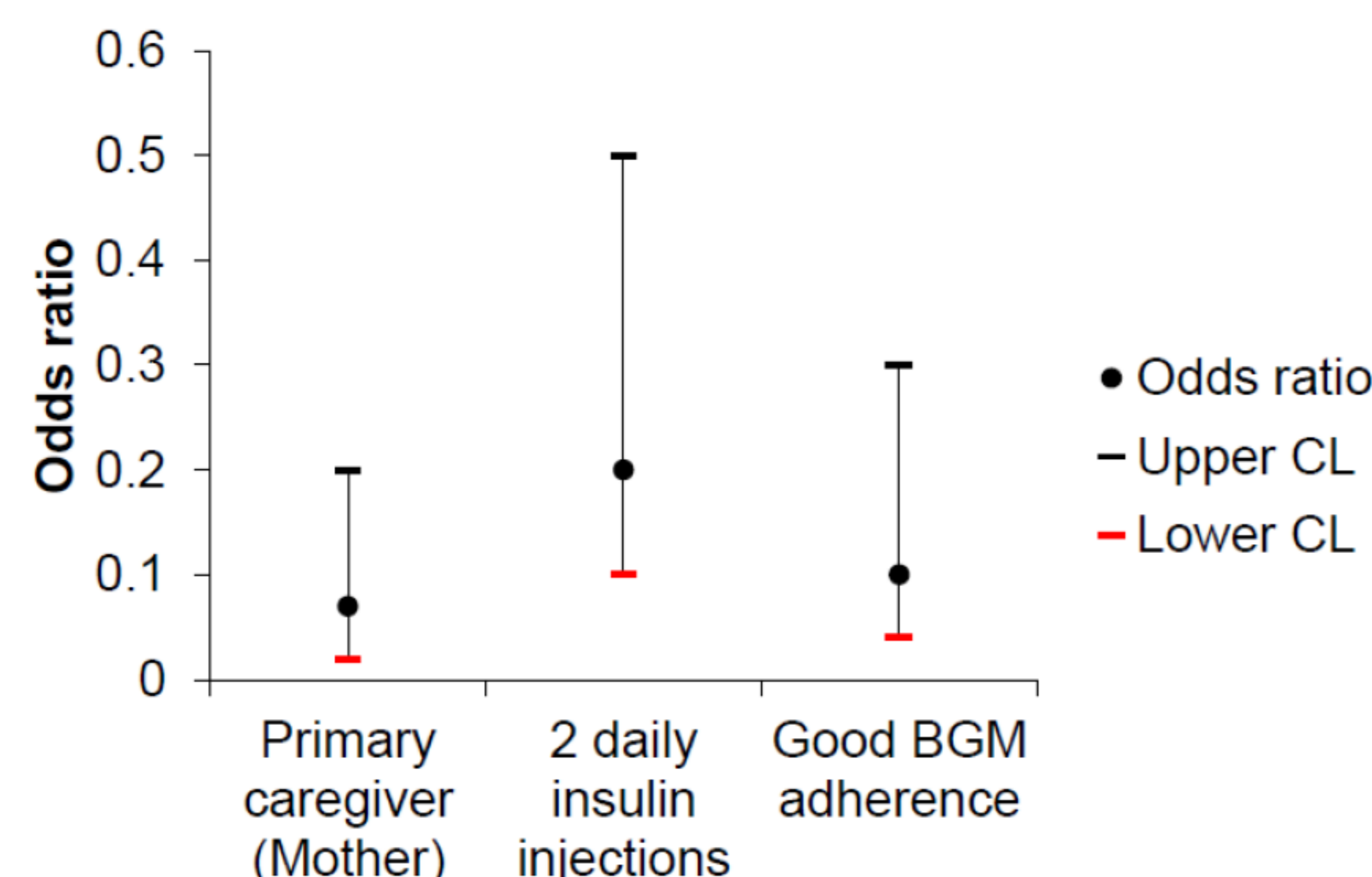


Figure 1: Bivariate analysis showing factors associated to good outcome as indicated by HbA1c ($p < 0.001$). BGM; Blood glucose monitoring.

Older age (OR 1.1, 95% CI 0.4 – 3.2) and longer diabetes duration (OR 0.9, 95% CI 0.3 – 2.9) were not associated to good outcome ($p > 0.05$). Minimal/moderate caregiver involvement in blood glucose monitoring (OR 7.7, 95% CI 2.7 – 22.0) and insulin injection (OR 14.9, 95% CI 4.8 – 46.5) were significantly ($p < 0.001$) associated to poor outcome.

Table 1: Multivariate binary logistic regression analysis with HbA1c (%) as dependent variable (odds ratios adjusted for age and gender)

	Odds ratios (OR) for HbA1c	(95% CI)	p-value
Primary caregiver			
Mother	0.02	(0.002 – 0.189)	0.001
Others		ref	
Caregiver involvement in insulin injection			
Minimal/Moderate	26.8	(4.4 – 56.1)	0.001
Optimal		ref	

Having a mother as a primary caregiver was an independent predictor of good outcome as measured by HbA1c.

Conclusions:

This study confirms that the mother’s involvement in the diabetes management of their children is the most important determinant for treatment outcome. It is currently unclear whether the direct involvement of the mother is important or whether “mother as a primary caregiver” is a strong indicator for a setting in which diabetes treatment is possible.

Keywords:

Predictors, outcome, HbA1c, type 1 diabetes, children and adolescents

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