Delayed referral of new-onset type 1 diabetes increases the risk of diabetic ketoacidosis

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TO THE EDITOR: The incidence of type 1 diabetes mellitus (T1DM) is increasing in Australia.1,2 There is also general consensus that the incidence of diabetic ketoacidosis (DKA) is increasing in children, as noted in an Australian study.3 We conducted a retrospective audit of the referral pattern of patients with newly diagnosed T1DM presenting to the Children’s Hospital at Westmead, a tertiary referral centre serving the population of western Sydney.

Referral data were available for 191 of 204 patients with newly diagnosed T1DM admitted to the hospital between January 2003 and December 2004. Most patients (150; 79%) had presented to their general practitioner before admission to hospital, and the remainder had initially presented to an emergency department.

In the former group, the diagnosis of diabetes was indicated in referral letters or admission notes for 128 patients (85%), while a diagnosis other than diabetes (eg, gastroenteritis, urinary tract infection, sepsis) was made for 22 patients (15%). DKA was less common among patients whose referral letter indicated a diagnosis of diabetes compared with those with an alternative or no diagnosis or without a referral letter (27% v 47%; P < 0.001). Most patients (105; 70%) were referred to an emergency department within 24 hours of presentation to the GP, and their rate of DKA was lower than in those referred after 24 hours (31% v 51%; P = 0.03). These data suggest that better understanding by primary carers of the symptoms of new-onset T1DM and earlier referral are significantly associated with reduced risk of DKA.

Most patients who first saw a GP (125; 83%) had initial investigations arranged; bedside urinalysis and/or measurement of finger-prick blood glucose levels were performed in 66%, while 31% were sent for formal blood tests. Patients who had bedside investigations performed had a significantly lower rate of DKA than those who had only formal blood tests or no investigations performed (26% v 52%; P = 0.002). It is noteworthy that, among patients who first saw a GP, 23 (15%) were diagnosed with diabetes but were not referred to an emergency department within 24 hours. The reasons for this are unclear but may be due to the GP waiting for confirmatory blood test results. The Australasian Paediatric Endocrine Group and International Society for Pediatric and Adolescent Diabetes guidelines recommend immediate referral for suspected new-onset T1DM, as DKA is fatal if left untreated.4

A public awareness campaign conducted in Italy in the 1990s was successful in reducing the incidence of DKA in children with newly diagnosed T1DM.5 Australian communities might benefit from a similar campaign to encourage prompt identification of symptoms of diabetes in childhood, prompt bedside investigations, and immediate referral to hospital for definitive care.

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