

OBSERVATIONS

Assessing Dependency in Insulin-Treated Patients With Diabetes Supported by a Community Nursing Service

Patients with insulin-treated diabetes deemed incapable of self-care present community nurses in the U.K. with a significant work load. Factors determining such dependency are unreported. We undertook an audit to identify the care received by such patients with the aim of giving back or increasing independence wherever possible.

Patients visited by the Wolverhampton Community Nursing Service to assist with their insulin were identified, and dependency was evaluated using uniform criteria. The potential for increased self-care and independence was assessed by community nurses. Diabetes nurse specialists were subsequently involved further to determine whether a decrease in dependency was possible.

There were 88 patients aged 76 ± 10 (40–95) years (mean \pm SD [range]) who were identified. Of these, 28 patients (32%) were on once- and 60 (68%) on twice-daily insulin. Visits occurred twice daily in 24 patients (27%), once daily in 50 patients (57%), and less frequently in 14 patients (16%) (36,950 visits/year). Procedures carried out were as follows: insulin drawing up (75 patients), injecting (46), technique checking (24), blood glucose monitoring (7), and others (7).

Initial dependency factors were as follows: state of mind ($n = 50$, 57%; 28 patients with dementia, 9 refusing self-care, 8 with debilitating anxiety, and 5 with psychotic disorders), visual impairment ($n = 53$, 60%), poor dexterity ($n = 30$, 34%), stroke ($n = 18$, 20%), and social problems ($n = 36$, 41%), mainly social isolation ($n = 31$). Each category constituted the single major dependency factor in 50 (57%), 14 (16%), 18 (20%), 6 (7%), and 0 patients, respectively. The community nurses considered 40 (45%) patients capable of further independence and 48 (55%) not. For those not capable, there was total

agreement by the diabetes nurse specialists. Of those seen as capable of greater independence ($n = 40$), only five became independent, and dependency was reduced in seven ($n = 12$; nine [75%] patients with visual problems that were overcome by the use of preloaded insulin pens and three with dexterity problems). There were 28 patients who did not proceed to increased independence; in 21, this was due to psychological/psychiatric problems. Reevaluation of patients falling into the finally dependent group ($n = 76$) showed the following barriers: state of mind ($n = 50$, 66%), dexterity ($n = 15$, 20%), stroke ($n = 6$, 8%), and visual problems ($n = 5$, 7%; all compounded by dexterity problems). The workload reduction for the community nurses after this process was 4,361 visits/year (11.8%).

Insulin-treated diabetic patients dependent on community nursing present a significant caseload. Overcoming visual and dexterity problems made a small but important contribution both to establishing patient independence and to reducing nursing workload. Greatly underestimated and previously unrecognized was the contribution of state of mind to dependency. No patient falling into this category gained independence. Our study is the first to document this finding, and it provides data for assessing dependency and suggests the need for a close liaison between community services and specialist diabetes services in assessing the need for continuing care in community-dependent patients with insulin-treated diabetes.

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Transient Hypoglycemic Hemiparesis in Children With IDDM

Focal neurological deficits complicating hypoglycemia are well-described in adults (1). However, they are uncommon in children. Although the mechanism

of the neurological deficit remains unclear, the selectivity of the neurological damage caused by hypoglycemia implies that different areas of the brain have different degrees of vulnerability (2). Cerebrovascular disease may be implicated in the pathogenesis of hemiparesis in adults, but this is most unlikely to be the case in children.

We observed nine episodes of acute transient hemiparesis following nocturnal hypoglycemia in five young children with IDDM.

In all five children, IDDM had been diagnosed at an early age, between 1 and 4 years. They were receiving a combination of intermediate and short-acting insulin, twice a day, at a dose of $0.7\text{--}1.0 \text{ U} \cdot \text{kg}^{-1} \cdot \text{day}^{-1}$. At the time of the episode, HbA_{1c} varied between 6.5 and 11.4% (nondiabetic range 4.7–7.9) in seven cases. In the other two episodes, HbA_{1c} was 7.0 and 8.2%, respectively (nondiabetic range 4.0–5.8).

There was no past medical or family history of migraine. Although two children had a previous history of generalized convulsions attributed to hypoglycemia, none had a history of a seizure disorder. In all cases, the severe hypoglycemic episode occurred in the early hours of the morning, usually when the child was still asleep. Capillary blood glucose checked in eight out of nine episodes ranged between 1.9 and 3.0 mmol/l.

All of the children presented with confusion and with weakness on one side of their body. Two children also had dysphasia, and one of them had ataxia.

Three of five cases had more than one episode of severe hypoglycemia. This confirms previous reports that children with severe hypoglycemia are likely to have a history of similar episodes (3). The episodes of hypoglycemic hemiparesis were transient, lasting between 15 min and 2 days. The timing of neurological recovery may be related to the length and severity of the hypoglycemic insult. No signs of any residual neurological dysfunction and no evidence of any cognitive impairment could be noted.

All five children were right-handed, and in four of them, the affected side was the left, as previously reported (4). This might suggest that the nondominant hemisphere is more susceptible to hypoglycemia. However, other reports have shown it to be the right side that is more commonly affected. In those children who had recurrent episodes, the affected side