The Wessex Starting Insulin Study: patient follow-up

Jill Rodgers

Introduction

The final part of this three-part series on DSN practice in initiating insulin therapy examines the frequency and type of follow-up that patients received during the first month of taking insulin in the Wessex Starting Insulin Study. This includes both telephone and face-to-face contact in three groups of patients: children, adults with type 1 diabetes and adults with type 2 diabetes.

The Wessex Starting Insulin Study examined the care provided by diabetes nurse specialists (DSNs) in Wessex to 111 people with diabetes in the first month of insulin therapy in Spring 1997. The methodology of the study, and who was involved in decision making at various stages of insulin therapy, were discussed in the first article in this three-part series (Rodgers, 1998). The second article looked at the choices made around the practical aspects of insulin initiation (Rodgers, 1999). The third and final article in the series describes the follow-up of patients during the first month of insulin therapy.

Responses to the questionnaire used in the study were analysed according to the three main types of patients seen: children; adults with type 1 diabetes; and adults with type 2 diabetes.

Telephone contact

Table 1 shows the number of telephone contacts in the first week. In all groups, a number of people, including children, were not contacted at all by telephone, although some may still have been in hospital. The largest number of calls were recorded in the paediatric group, and this was the only category where more than four calls were made in the first week, the most being 10 calls to a single child. This group had a mean of 3.2 telephone calls in the first week, compared with 1.2 and 1.4, respectively, for adults with type 1 or type 2 diabetes.

The same pattern was seen in the number of telephone calls in the first month (*Table 2*). The paediatric group contained the largest number of people receiving more than 10 calls in the first month, the largest number of calls recorded in the first month overall being 19 to a single child.

The paediatric group had a mean of 6.18 calls per child in the first month, compared with 3.7 per adult with type 1 diabetes and 3.9 per adult with type 2 diabetes.

Table 3 shows the total telephone contact time in the first month for each category of patient. Again, the pattern of results reflects those in *Tables 1* and *2*, with telephone follow-up time being much higher in the paediatric group. The mean total telephone contact time was 52.5 minutes per child, although for some children more than 2 hours was spent on telephone follow-up.

The data collected on telephone contact during follow-up indicates that telephone follow-up, in addition to face-to-face contact, is common in all patients starting insulin. As this follow-up is rarely recorded by DSNs, it follows that true patient follow-up is inadequately documented. It could be argued that all DSNs should be documenting telephone follow-up routinely, to reflect the reality of their workload. This is particularly important in paediatric care, where there may be up to twice as much telephone contact time per patient compared with adult care.

Face-to-face contact

Table 4 shows the number of face-to-face contacts in the first week of insulin therapy. Some children had no DSN contact in hospital and the maximum number of contacts in the ward environment was five. One or two

ARTICLE POINTS

1 Telephone contact with people starting insulin therapy accounts for a high proportion of follow-up.

2 Paediatric follow-up is far in excess of that given to adults commencing insulin.

3 The amount of follow-up given to patients with type 1 and type 2 diabetes who are commencing insulin is similar.

4 Further research is required to determine whether the variation in follow-up is appropriate.

5 It is not clear whether increased contact time when initiating insulin results in better outcomes of care.

KEY WORDS

- Starting insulin
- Follow-up
- Telephone contact
- Face-to-face contact

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visits were recorded for some children in an outpatient setting, but the largest number recorded was for home visits, with up to 14 in the first week. The mean number of face-to-face contacts in the first week was 6.48 per child, and the highest number recorded for one child was 19.

Adults with type 1 diabetes had 0–2 face-to-face contacts in the ward or at home, and 0–3 contacts in an outpatient setting. The maximum number of contacts in all venues combined in this group was three in the first week, with a mean of 1.84.

For adults with type 2 diabetes, follow-up varied again. The maximum number of face-to-face contacts in any one venue was seven, for home visits, which was also the total number in any venue for any single person in this category. The mean number of contacts for people with type 2 diabetes was 2.13 – more than for type 1 diabetes.

The numbers of face-to-face contacts in the first month (*Table 5*) showed a similar pattern to those seen with telephone contacts. The paediatric group again had the largest number of contacts, with up to 18 home visits and up to 24 contacts overall, giving a mean of 9.59 contacts per child in the first month. Adults with type 2 diabetes followed next, with up to 17 contacts (all at home in one case), and a mean of 3.37 contacts per person. For adults with type 1 diabetes, the numbers were much smaller, with the maximum number of contacts for any one person being four, and a mean of 2.61 contacts per person.

Table 5 also provides analysis of where people were seen during the first month. A large number of children were seen in the home, with a mean of 5.5 visits per child.

Table 1. Number of telephone calls in the first week

	Children with diabetes (n=27)	Adults with type 1 diabetes (n=13)	Adults with type 2 diabetes (n=67)
0	9 (33%)	2 (15%)	16 (24%)
1–2	7 (26%)	10 (77%)	36 (54%)
3–4	4 (15%)	1 (8%)	13 (19%)
>4	7 (26%)	0	0
Mean number of calls	*3.2*	*1.2*	*1.4*

Table 2. Number of telephone calls in the first month

	Children with diabetes (n=27)	Adults with type 1 diabetes (n=13)	Adults with type 2 diabetes (n=67)
0	2 (7%)	0	6 (9%)
1–2	8 (30%)	5 (38%)	15 (22%)
3–5	3 (11%)	5 (38%)	30 (45%)
6–10	8 (30%)	3 (23%)	13 (19%)
>10	6 (22%)	0	3 (4%)
Mean number of calls	*6.18*	*3.7*	*3.9*

Table 3. Total telephone time (in minutes) in the first month

	Children with diabetes (n=27)	Adults with type 1 diabetes (n=13)	Adults with type 2 diabetes (n=67)
0	2 (7%)	0	6 (9%)
5–19	8 (30%)	4 (31%)	20 (30%)
20–60	7 (26%)	7 (54%)	32 (48%)
61–120	7 (26%)	2 (15%)	5 (7%)
>120	3 (11%)	0	0
Mean telephone time	*52.5*	*37.6*	*27.8*

In adults with type 2 diabetes, the number of home visits averaged 1.19 per person, and only 0.3 per person in adults with type 1 diabetes. It is unclear why this variation exists, or whether it is justifiable.

The number of follow-up visits raises several questions.

- What was the reason for the enormous variation in the number of follow-up contacts? This variation existed in each category, although to a lesser degree in people with type 1 diabetes, where the number of follow-up contacts was lowest.
- If there were reasons for the variation, were they justified and did the increased number of visits make a difference, e.g. were the outcomes better or worse in those who were seen less often?
- If one of the goals of insulin initiation is to achieve patient independence, should

Table 4. Number of face-to-face contacts in the first week

		Children with diabetes (n=27)	Adults with type 1 diabetes (n=13)	Adults with type 2 diabetes (n=67)
Home	Range	0–14	0–2	0–7
	Mean	3.25	0.15	0.83
Outpatient setting	Range	0–2	0–3	0–3
	Mean	0.07	1.3	1.26
Ward	Range	0–5	0–2	0–2
	Mean	2.51	0.3	0.02
Total	Range	0–19	1–3	0–7
	Mean	6.48	1.84	2.13

Table 5. Number of face-to-face contacts in the first month

		Children with diabetes (n=27)	Adults with type 1 diabetes (n=13)	Adults with type 2 diabetes (n=67)
Home	Range	0–18	0–2	0–17
	Mean	5.5	0.3	1.19
Outpatient setting	Range	0–3	0–4	0–6
	Mean	0.8	2.0	2.08
Ward	Range	0–5	0–2	0–2
	Mean	2.51	0.3	0.02
Total	Range	4–24	1–4	1–17
	Mean	9.59	2.61	3.37

Table 6. Total face-to-face contact time in the first month

	Children with diabetes (n=27)	Adults with type 1 diabetes (n=13)	Adults with type 2 diabetes (n=67)
Up to 1 hour	0	1 (8%)	7 (10%)
1–2 hours	0	7 (54%)	35 (52%)
2–3 hours	1 (3%)	1 (8%)	18 (27%)
3–4 hours	3 (11%)	3 (23%)	6 (9%)
4–7 hours	6 (22%)	1 (3%)	1 (1.5%)
7–10 hours	11 (41%)	0	0
>10 hours	5 (19%)	0	0
Mean contact time	*8 hours 11 minutes*	*2 hours 26 minutes*	*2 hours 5 minutes*

PAGE POINTS

1 The amount of follow-up during commencement of insulin therapy varied between patient groups and within patient groups.

2 On average, DSNs spent three times as much time with children commencing insulin as with adults in either category.

3 The amount of time that needs to be spent with different groups of patients to produce optimum results is not known.

4 The type of diabetes and individual patient characteristics need to be taken into account when deciding on frequency and type of follow-up.

5 Telephone contact with patients starting insulin is a major part of the DSN's workload and should be documented.

Rodgers J (1998) The Wessex Starting Insulin Study: methodology and decision making. *Journal of Diabetes Nursing* **2**(6): 183–6

Rodgers J (1999) The Wessex Starting Insulin Study: practicalities of initiating insulin. *Journal of Diabetes Nursing* **3**(1): 20–4

patients be seen less often or more often in the early days of insulin therapy?

It may be that some patients commencing insulin are dependent on health professionals for help with insulin administration; if so, this might account for the higher numbers of contacts in the paediatric group and adults with type 2 diabetes. However, this raises the question of whether the DSN should deal with individuals who may be dependent on others, or whether the role should be an educational one that concentrates on those who are able to achieve independence?

None of these questions are answered by this study. Further research is needed to define when continued intervention by DSNs is appropriate and when it is not.

The total face-to-face contact time with people with diabetes in the first month is shown in *Table 6*. In paediatric care, the minimum time spent with a child was 2 hours, and the maximum was 16 hours 50 minutes. The mean contact time for a child was 8 hours 11 minutes. In adults with type 1 diabetes, the time spent with individual patients ranged from 45 minutes to 5 hours, and the mean contact time was 2 hours 26 minutes. This pattern was similar in people with type 2 diabetes, where the range was 1–7 hours, and the mean contact time was 2 hours 5 minutes.

These results indicate that, on average, the amount of time spent with children is more than three times that spent with adults in any category. Paediatric DSNs will welcome this information, as it provides evidence that the workload when initiating insulin for a single patient is far heavier than in adult care, and thus amply justifies the smaller numbers of patients cared for by paediatric DSNs.

The mean time spent with adults with type 1 diabetes was greater than that spent with adults with type 2 diabetes, despite the former group having a smaller mean number of contacts. Thus the amount of time spent with patients at individual visits was greater per person for type 1 patients than for type 2 patients, although the reason for this is not known. Nonetheless, the variation between the two adult groups is small compared with that between the adult groups and the paediatric group.

Questions around the aims of care remain, and the amount of time that needs to be spent with different groups of patients to produce optimum results is still unknown.

Discussion

Variation in patient follow-up (telephone and face-to-face contact) and in the amount of time spent on follow-up of different categories of patients has been adequately demonstrated in this study.

Analysis of the amount of follow-up showed that there was not only variation between different patient groups, but also wide variation within each individual group. This suggests that, in addition to the type of diabetes, individual patient characteristics need to be taken into account when deciding on the frequency and type of follow-up. Further study into the rationale behind the decisions made is needed, to determine how much the decision making is influenced by patient characteristics and how much is determined by the 'usual practice' of individual DSNs.

The Wessex area encompasses widely differing populations, from densely populated inner cities to sparsely populated rural areas, and this may influence the amount and type of follow-up provided.

Conclusions

Telephone contact with patients starting insulin is a major part of a DSN's workload, and should be recorded as activity. Whatever practice DSNs follow, they should be able to justify this to themselves and to their employers, as with any other area of care. How much of the findings reflect 'common practice' of those DSNs who submitted information was not evident. Variations in follow-up between different groups of patients, and different patients in the same group, need to be studied further.

The study findings have gone a long way towards defining current practice in initiation of insulin by DSNs, including who makes the decisions, how the practical aspects are dealt with, and how patients are followed up. However, the appropriateness of the care provided has not been investigated. The questions raised by this study need to be addressed in future research. ■