Letters to the Editor

A short performance test can help to predict adherence to self-administration of insulin in elderly patients with diabetes

SIR—In elderly patients with diabetes, physicians are often concerned about increasing functional limitations that may impede a successful self-management. In particular, the correct handling of the insulin injection requires complex self-management abilities [1]. Among these functional limitations, loss of visual acuity, loss of manual abilities and cognitive decline are of most importance. Geriatric assessment provides tools for quantitative determination of those limitations [2], but suitability in the context of diabetes self-management has not been determined so far and a short specific test is desirable to avoid a more time-consuming application of the complete assessment. Therefore, we evaluate the predictive value of an easily available and short performance test—timed test of money counting (TTMC) [3]—to identify adequate resources for a successful self-management of insulin administration.

During a 6-month screening period, patients scheduled for self-administration of insulin were to be included. Exclusion criteria were age <60 years, previous self-administration of insulin, evident absolute barriers to establish the self-administration of insulin, especially advanced dementia, poor visual acuity and expected non-compliance. Patients were recruited both from the wards of a university hospital and from outpatient clinics. All patients gave informed consent. Besides the TTMC, a semi-structured interview was performed to characterise social context, diabetes-related aspects and functional abilities especially referring to limitations in daily activities [4]. Cognitive abilities were assessed applying the DemTect test [5], which allows the detection of early cognitive decline. Finally, diabetes knowledge was examined by a self-developed short list of relevant questions. Three months after the establishment of self-administration of insulin, a reassessment via telephone contact was done.

Nineteen patients completed the study. Six patients (31.6%) did not adhere to the self-administration of insulin. Table 1 summarises data stratified according to the adherence. There was a significant correlation between low performance in the TTMC (>45 s to correctly count the money) and non-adherence to self-administration of insulin, but not between low values in DemTect (corrected for age) alone. Also, non-adherent patients disclosed significantly more frequent limitations of manual handling and daily support in activities of daily living in the semi-structured interview and a lower level of diabetes-related knowledge at baseline.

These preliminary data suggest that a short combined testing of visual, manual and cognitive abilities in the elderly is feasible, and that the TTMC may be considered to be a reliable performance test in this context. Testing or asking about cognitive impairment alone does not allow to identify

Table 1. Characteristics according to adherence to self-administration of insulin after 3 months

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Adherence</th>
<th>n</th>
<th>No adherence</th>
<th>n</th>
<th>P-value&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>72 (60–88)</td>
<td>13</td>
<td>77.5 (66–87)</td>
<td>6</td>
<td>0.391</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>26.3 (20.3–32.4)</td>
<td>13</td>
<td>24.0 (18.8–30.8)</td>
<td>5</td>
<td>0.338</td>
</tr>
<tr>
<td>Women</td>
<td>8 (61.5%)</td>
<td>13</td>
<td>2 (33.3%)</td>
<td>6</td>
<td>0.350</td>
</tr>
<tr>
<td>Co-morbidity&lt;sup&gt;a&lt;/sup&gt;</td>
<td>4.5 (2–8)</td>
<td>10</td>
<td>4 (3–6)</td>
<td>6</td>
<td>0.786</td>
</tr>
<tr>
<td>Diabetes duration (years)</td>
<td>9 (2–18)</td>
<td>13</td>
<td>4 (0–15)</td>
<td>6</td>
<td>0.270</td>
</tr>
<tr>
<td>HbA1c (%)</td>
<td>8.55 (6.0–11.8)</td>
<td>12</td>
<td>10.75 (6.2–15.5)</td>
<td>6</td>
<td>0.085</td>
</tr>
<tr>
<td>Vascular disease and/or polyneuropathy</td>
<td>3 (23.1%)</td>
<td>13</td>
<td>2 (33.3%)</td>
<td>6</td>
<td>1.0</td>
</tr>
<tr>
<td>Hypoglycemia ≥1/month</td>
<td>1 (7.7%)</td>
<td>13</td>
<td>0</td>
<td>4</td>
<td>1.0</td>
</tr>
<tr>
<td>Previous diabetes education</td>
<td>2 (15.4%)</td>
<td>13</td>
<td>1 (20.0%)</td>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td>Diabetes knowledge&lt;sup&gt;b&lt;/sup&gt;</td>
<td>7 (0–10)</td>
<td>13</td>
<td>0.5 (0–4)</td>
<td>6</td>
<td>0.040</td>
</tr>
<tr>
<td>Needs regular support in performing daily activities&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3 (23.1%)</td>
<td>13</td>
<td>5 (83.3%)</td>
<td>6</td>
<td>0.041</td>
</tr>
<tr>
<td>Impaired manual performance&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2 (15.4%)</td>
<td>13</td>
<td>4 (66.7%)</td>
<td>6</td>
<td>0.046</td>
</tr>
<tr>
<td>Impaired visual acuity&lt;sup&gt;c&lt;/sup&gt;</td>
<td>8 (61.5%)</td>
<td>13</td>
<td>4 (66.7%)</td>
<td>6</td>
<td>1.0</td>
</tr>
<tr>
<td>Problems due to cognitive decline&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2 (15.4%)</td>
<td>13</td>
<td>1 (16.7%)</td>
<td>6</td>
<td>1.0</td>
</tr>
<tr>
<td>Timed test of money counting ≥45 s</td>
<td>3 (23.1%)</td>
<td>13</td>
<td>4 (80%)</td>
<td>5</td>
<td>0.047</td>
</tr>
<tr>
<td>DemTect: suspected dementia</td>
<td>2 (18.2%)</td>
<td>11</td>
<td>3 (50%)</td>
<td>6</td>
<td>0.280</td>
</tr>
</tbody>
</table>

Data are presented as median (minimum–maximum) in case of continuous variables and as n (%) in case of categorical variables.

<sup>a</sup> Number of active diagnosis taken from the history;  <sup>b</sup> maximum 10;  <sup>c</sup> taken from the interview;  <sup>d</sup> Fisher’s exact test (categorical variables) and Wilcoxon two-sample test (continuous variables).
patients at risk for non-adherence. These preliminary results, however, await confirmation in a larger number of patients.

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Mental capacity assessments and discharge decisions

SIR—I read the article by Stewart et al. on Mental Capacity Assessments and Discharge Decisions with great interest [1].

This particular topic forms a bulk of work for old-age psychogeriatric liaison services in general hospitals. Experience from working in this service suggests that there appears to be an assumption from hospital social workers that only old-age psychiatrists are qualified to make capacity assessments (much to the annoyance of geriatric colleagues!)

Good capacity assessments in relation to discharge decision-making depends largely on the quality of information a doctor gathers regarding a patient’s previous level of functioning in the community (unfortunately, this information is not always easily available, but time must be spent to gather as thorough a knowledge of it as possible). This can be done by any clinician or social worker and forms the cornerstone for deciding an individual’s insight and appreciation of the risks they have endured in the community before admission to hospital and whether their decision-making takes into account of the same. Most elderly patients naturally desire to return home from hospital but base their choices on how they remember they used to function in the past (often forgetting the dangers they have encountered in recent times).

Decisions must never be made on the basis of a patient’s level of functioning in the hospital only during a period of acute hospitalisation, because it is often not a correct reflection of either their cognitive or their functional ability.

If good quality corroborative information is gathered about patient’s pre-hospitalisation period of functioning, ‘trial discharges’ become unnecessary, because it is often fraught with difficulty later on (excepting in cases where such information is unavailable or unreliable).

Hence, it is the process of how a patient arrives at a decision and not the decision itself that is important in capacity assessment regarding discharge decisions.

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Falls definition—reliability of patients’ own reports

SIR—Your systematic review of methodology in falls trials [1] highlights the complexity of the definition and identification of falls. If such inconsistency exists even within well-designed and resourced research studies, how much more difficult will it prove to develop effective falls-monitoring procedures for day-to-day use in clinical settings.

We have explored the reliability of patients’ own reports as an epidemiological tool. As part of the validation of a study of patients presenting to our Accident and Emergency department, we approached 107 individuals aged over 50 years. Each was initially asked ‘Did you fall?’, and their response was recorded. A detailed history of the events surrounding the fall was then taken.

Mean age was 67.7 (range 50–91) years. Sixty-nine (64.5%) of them were women. Fifty-four patients (50.5%) stated that they had fallen, and on detailed questioning, this appeared consistent with the most widely accepted definitions of falls [2, 3].

Of the 53 patients who did not report a fall, five described a ‘slip’ and one had no clear recollection of events on detailed questioning. Thus, the ‘Did you fall?’ question had a sensitivity of 91.5% and a specificity and positive predictive value of 100% as a tool in the A&E setting.

Existing definitions of a fall are impractical for use by the large numbers of staff from different disciplines who work in this and other clinical settings. A reliance on patient reports in response to the simple ‘Did you fall?’ question appears justified for falls monitoring and similar epidemiological purposes.

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