Structure of Visits Persons with Diabetes in Croatian Family Practice – Analysis of Reasons for Encounter and Treatment Procedures using the ICPC-2

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ABSTRACT

The reasons for encounter and the procedures conducted during the visit persons with diabetes to family practice have been investigated. Five family practitioners located in two Croatian counties took part in this study. In this study patients with diagnoses E10–E14 according to International Classification Disease – 10 (ICD-10), were involved. There were 543 persons with diabetes (women 324) in the total population of 10,150 patients. Data were registered according to the International Classification Primary Care-2 (ICPC-2) (components 1–7 for reasons of encounter, and components 2–6 for procedures during the visit), in period October till December 2005. 871 visits of persons with diabetes (average age 65.7±12.5) were registered. Patients presented in total 1921 reasons for encounter or 2.1±1.1 per visit. Family practitioner made in total 2,341 procedures or 2.6±1.5 procedures per visit. 85.0% of patients had 1 to 3 reasons for encounter, 78.4% of patients had 1 to 3 procedures per visit. 64.4% of patients with diabetes presented at least one reason for encounter connected to diabetes. The most common reasons for encounter were prescriptions of medication 46.4 per 100 reasons for encounter, the second was diagnostic procedure 19.9, request for analysis of findings 11.1, symptoms complaints 11.1, request for referrals to diagnostic procedures or specialist consultation 8.9 and administrative requests 1.6 per 100 reasons for encounter. Family practitioner performed procedure prescriptions of medication 47 per 100 procedures. The second was diagnostic procedure 32.8 per 100 procedures, referrals to diagnostic procedures or specialist consultation 14.7 and administrative procedures 1.7 per 100 procedures. From the total number of 100 referrals to specialist, 23 were to diabetologist, 15 to ophtalmologist, 13 to cardiologist. The largest proportion of procedure belong to diabetics 33.8%, followed by the circulatory system 25.4%, musculoskeletal 6.9%, symptoms 5.1%, respiratory 4.5%. The reasons for encounter and the procedures conducted during the visit have direct influence to the quality of care for persons with diabetes. It is necessary collecting the data and research in the field of reasons for encounter and procedures during the visit of person with diabetes. The results then can be compared to the results already found in literature.

Key words: visits, persons with diabetes, family practice, Croatia

Introduction

Diabetes is a prototype of chronic disease that imposes a large public health burden1.

New perceptions about the role of family practitioner in managing chronic patients came along. Care of person with diabetes is being transferred from hospital and specialist care to family practice2-3. A person suffering from diabetes being a chronic patient is presented in a complex comorbidity form4-6.
Changes in therapeutic approaches in diabetic patients have been noticed during the last decade. The number of their visits to family practitioner and diabetologist is constant while the number of their consultations is increasing because of diabetic complications. Duration of visits of diabetic patients in family medicine is becoming longer. Management of chronic patient, persons with diabetes, in family medicine is an indicator of quality care in family medicine. Indicators for monitoring the quality of care were arranged, mostly connected with the procedures conducted by the fixed guidelines and the procedures’ results. There were not many studies investigating the type and amount of problems that general practitioner was facing during the patients’ visits and reasons for their encounter. The reasons for encounter and the procedures conducted during the visit have direct influence to the quality of care, application of curricular guidelines, patient’s education, support in the management of the disease, record management, research. It is well known that family practitioner is solving most of the problems during the visit of person with diabetes in comparison with all other chronic patients. Family practitioner, as a part of the treatment of persons with diabetes, conducts the biggest proportion of prescriptions and referrals.

The new role of the family practitioner in the management of the chronic diabetic patient raised the number of concerns whether the visit of diabetic patient is a traditional visit of a chronic patient and how much time is there for preventive procedures concerning complications, early detection of other diseases, education, for patient support, and for the further studies as well.

Such analyses were not conducted in Croatia so far, within it’s transitional health care system.

It is a complex task to code the verbal content of the patients’ requests along with practitioner’s care description. The structure of International Classification Primary Care-2 (ICPC-2) has the possibility of transcription and coding the reasons for encounter and procedures conducted on the patient during the visit.

The objective of this study is a prospective analysis of reasons for encounter and the procedures conducted during the persons with diabetes visits to family practitioner in Croatia using ICPC-2.

Subjects and methods

Study population

Five family practitioners located in two Croatian counties (Zagreb county and Brodsko-posavska county) took part in this study. This investigation involved patients with diagnoses, E10–E14 according to International Classification Disease – 10 (ICD-10) out of the total population in care of those practices. The data were collected prospectively for each patient with diabetes for every visit during the follow-up period from October till December 2005. Visits of person with diabetes in Croatia to family practitioners are unlimited and are defined as meetings of patients and practitioners in practice. This study analysed visits during the regular practices working day.

Instrument for measures

Data were registered according to the ICPC-2 components (components 1–7 for reasons of encounter, and components 2–6 for procedures during the visit). Reasons for encounter of person with diabetes were registered according to the statements and requests of the patients. Procedures done during the visits were registered independently by each other member of the team (nurse): diagnostic procedures, therapeutic and prescribed medications, preventive procedures, referrals to diagnostic procedures outside the practice, referrals to specialists by diagnoses, administrative procedures. Data were registered in electronic form other than the regular practice program.

Statistical analysis.

Data of reasons for encounter, procedures during the visits were analysed by descriptive statistical analysis.

Results

There were 543 persons with diabetes (women 324) in the total population of 10,150 patients. During the three month follow up period 871 visits of persons with diabetes were registered in range of 1–11 visits, average 4.2±12.5 visits per day. Average age of diabetic patients who visited family practitioner in the follow-up period was 65.7±12.5. Women did made 583 visits or 66.9% of all visits (Table 1).

Persons with diabetes presented in total 1921 reasons for encounter or 2.1±1.1 per visit. Family practitioner made in total 2341 procedures or 2.6±1.5 procedures per visit according to ICPC-2. 85.0% of patients had 1 to 3 reasons for encounter, and 78.4% of patients had 1 to 3 procedures per visit. 64.4% of patients with diabetes presented at least one reason for encounter connected to diabetes.

The most common reasons for encounter of person with diabetes were prescriptions of medication or other therapies 46.4 per 100 reasons for encounter. The second was diagnostic procedure and prevention 19.9 per 100 reasons for encounter, request for analysis of findings 11.1, symptoms complaints 11, request for referrals to diagnostic procedures or specialist consultation 8.9 and administrative requests 1.6 per 100 reasons for encounter.

Family practitioner performed procedure prescriptions of medication or other therapies 47 per 100 procedures. The second was diagnostic procedure and prevention 32.8 per 100 procedures, referrals to diagnostic procedures or specialist consultation 14.7 and administrative procedures 1.7 per 100 procedures performed during visits of persons with diabetes (Table 1).

The largest proportion of procedure belong to endocrine metabolic (diabetes) 33.8%, followed by the circu-
latory system 25.4%, musculoskeletal 6.9%, symptoms 5.1%, respiratory 4.5% (Table 2).

Diabetic patients mentioned component 6 as a reason for the encounter in 171 cases. The physician made 357 procedures included in the component 6. 197 referrals for consultation to specialists were given to the patients. In total, the number of 100 referrals, 23 were to diabetologist, 15 to ophthalmologist, 13 to cardiologist.

According to morbidity reasons for all referrals the diseases were ranked as follows: metabolic diseases, cardiovascular diseases, musculoskeletal, eye diseases, urinary diseases (Table 3).

### TABLE 1
**REASONS FOR ENCOUNTER AND PROCEDURES OF PERSONS WITH DIABETES BY ICPC-2 CHAPTERS AND COMPONENTS**

<table>
<thead>
<tr>
<th>N = 871</th>
<th>Reasons for encounter</th>
<th>Procedures</th>
<th>Per 100 visits</th>
<th>Per 100 reason/procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>All visits</td>
<td>1921</td>
<td>2431</td>
<td>2.1±1.1</td>
<td>2.6±1.5</td>
</tr>
<tr>
<td>Visits with 1 to 3 reasons/procedures</td>
<td>740</td>
<td>683</td>
<td>*85 / 78.4</td>
<td></td>
</tr>
<tr>
<td>Visits with 4 and &gt; reasons/procedures</td>
<td>131</td>
<td>188</td>
<td>*15 / 21.6</td>
<td></td>
</tr>
<tr>
<td>Visits with diabetes as reasons/procedures</td>
<td>561</td>
<td>598</td>
<td>*64.4 / 68.8</td>
<td></td>
</tr>
<tr>
<td>Symptoms, complaints</td>
<td>212</td>
<td></td>
<td>**11</td>
<td></td>
</tr>
<tr>
<td>Diagnostic, screening, prevention</td>
<td>384</td>
<td>799</td>
<td>**19.9 / 32.8</td>
<td></td>
</tr>
<tr>
<td>Treatment, procedures, medication</td>
<td>892</td>
<td>1143</td>
<td>**46.4 / 47</td>
<td></td>
</tr>
<tr>
<td>Test results</td>
<td>214</td>
<td></td>
<td>**11.1</td>
<td></td>
</tr>
<tr>
<td>Administrative</td>
<td>30</td>
<td>42</td>
<td>**1.6 / 1.7</td>
<td></td>
</tr>
<tr>
<td>Referral and other</td>
<td>171</td>
<td>357</td>
<td>**8.9 / 14.7</td>
<td></td>
</tr>
</tbody>
</table>

N – number of visits, * per 100 visits, ** per 100 reason/procedure

### TABLE 2
**PROCEDURES AND DISTRIBUTION OF CHRONIC CONDITIONS OF PERSONS WITH DIABETES BY ICPC-2 CHAPTERS AND COMPONENTS**

| Components | A | B | D | F | H | K | L | N | P | R | S | T | U | W | X | Y | Z |
|------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Symptoms, complaints | | | | | | | | | | | | | | | | | |
| Diagnostic, screening, prevention | 112 | 1 | 13 | 6 | 10 | 242 | 31 | 16 | 3 | 53 | 20 | 214 | 17 | 7 | 5 | 49 | 799 |
| Treatment, procedures, medication | 7 | 2 | 25 | 26 | 12 | 304 | 88 | 14 | 78 | 36 | 50 | 462 | 25 | 6 | 8 | 1,143 |
| Test results | | | | | | | | | | | | | | | | | |
| Administrative | 1 | 2 | 3 | 1 | 2 | 3 | | 21 | 2 | 2 | 5 | 42 |
| Other | 1 | 2 | 3 | 10 | 48 | 41 | 20 | 9 | 16 | 12 | 96 | 30 | 12 | 8 | 357 |
| Total number of procedures | 120 | 5 | 72 | 57 | 32 | 595 | 162 | 53 | 90 | 105 | 82 | 793 | 74 | 27 | 21 | 54 | 2,341 |


### TABLE 3
**ANALYSIS OF COMPONENT 6 OF ICPC-2. ANALYSIS REFERRALS TO DIAGNOSTIC PROCEDURES OR SPECIALIST CONSULTATION**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>D</th>
<th>F</th>
<th>H</th>
<th>K</th>
<th>L</th>
<th>N</th>
<th>P</th>
<th>R</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>*67</td>
<td>1</td>
<td>9</td>
<td>30</td>
<td>9</td>
<td>25</td>
<td>18</td>
<td>13</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>46</td>
<td>8</td>
<td>4</td>
<td>5</td>
<td>197</td>
<td></td>
</tr>
<tr>
<td>**68</td>
<td>8</td>
<td>7</td>
<td>1</td>
<td>23</td>
<td>19</td>
<td>5</td>
<td>6</td>
<td>2</td>
<td>50</td>
<td>21</td>
<td>8</td>
<td>3</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>***66</td>
<td>4</td>
<td>2</td>
<td></td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
<td>1</td>
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<tr>
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<td>17</td>
<td>37</td>
<td>10</td>
<td>48</td>
<td>41</td>
<td>20</td>
<td>9</td>
<td>16</td>
<td>12</td>
<td>96</td>
<td>30</td>
<td>0</td>
<td>12</td>
<td>8</td>
</tr>
</tbody>
</table>

Discussion

According to our study there were 4 to 5 visits per day to the family practitioner by persons with diabetes.

Diabetic patient presented 2.1 reason for encounter per visit according to components I–VII, ICPC – 2. Family practitioner made 2.6 procedures according to components II–VI, ICPC-2.

By using other methods, there were 2.5 problems solved during the visit of person with diabetes in comparison to 2.1 problem of other chronic patients without diabetes. The «defensive» relation between a number of reasons for encounter and performed procedures was seen in our study. The analysis of reasons for encounter to family practitioner showed that it is a complex item. Patients perception of reasons for encounter is multifactorial, frequently considering biological, social, cultural, as well as psychological influences. There is a difference in perception of patients and practitioners in content of procedures during the visit. Patients usually expected less procedures than the practitioner performed. Chronic patients does not talk about his expectations but he trusts the physicians who is treating him for a long time.

Patient requested 1921 procedures in comparison to 2341 that were actually performed. This study didn’t investigate whether all the requested procedures were really performed. The factor related to health care system could have the influence to the number of reasons for encounter and procedures conducted in this investigation. There is a big proportion of frequent attenders in Croatia in comparison to other European countries.

Prescription is the most common reason for the encounter in our study. Literature shows that reason for encounter of chronic patients who are older than 65 are mostly request for prescription. Chronic patients and their physician mostly agreed on the prescription. In the last decade the biggest changes happened especially in therapeutic approach to person with diabetes. The number of persons with diabetes that use 5 medications to control their visits to achieve the best outcome.

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Educational programs for family medicine should be targeted toward chronic comorbid patients rather than to a solitary disease.

**Limitation Factors**

The most serious limitation factor is dependence on physicians’ self-reports. The physicians were aware of the study hypothesis and its goal and they could have aggravated or exaggerated the number of problems seen at each encounter. Collection of data according to ICPC-2 is not a routine collection of data in everyday family practice in Croatia. The other limitation factor is a period when data were collected and seasonal respiratory symptoms could influence the results especially to the reasons for encounters.

**REFERENCES**


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**STRUKTURA POSJETA OSOBA OBOLJELIH OD ŠEĆERNE BOLESTI U OBITELJSKOJ MEDICINI U HRVATSKOJ. ANALIZA RAZLOGA DOLASKA I POSTUPAKA TIJEKOM POSJETA UPORABOM ICPC-2**

**SAŽETAK**

Istražili smo razloge dolaska osoba oboljelih od šećerne bolesti i postupke tijekom posjeta obiteljskom liječniku. U studiji je sudjelovalo 5 obiteljskih liječnika iz 2 županija u Hrvatskoj. Prema Međunarodnoj klasifikaciji bolesti -10 (MKB-10), izdvojeni su pacijenti s E10–E14: 543 pacijenta (324 šećere) od 10 150 ukupno opredijeljenih pacijenata u skrbi obiteljskog liječnika. Podatci su bilježeni prema International Classification Primary Care-2 (ICPC-2), komponente 1–7 za razloge dolaska, a komponente 2–6 za postupke tijekom posjeta. U razdoblju listopad-prosinac 2005. Zabilježen je 871 posjet bolesnika oboljelih od šećerne bolesti prosječne dobi 65.7±12.5. Pacijenti su iznijeli 1,921 razlog ili 2.1±1.1 razloga po posjetu. Obiteljski liječnik je učinio 2,341 postupak ili 2.6±1.5 postupaka po posjetu. 85.0% pacijenata iznijeli su od 1 do 3 razloga dolaska, 14.4% od 4 do 6 razloga, a 0.6% više razloga. Razlozi dolaska i postupci tijekom posjeta obiteljskom liječniku imaju izravan utjecaj na kvalitetu zaštite osoba oboljelih od šećerne bolesti. Potrebno je stoga podatke bilježiti, istraživati i uspoređivati s podacima iz literature.