EPIDEMIOLOGY OF DIABETES AND ITS COMPLICATIONS IN TRANSCARPATHIAN REGION

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Epidemiology of DM

More than 285 million people – 4.1%
1,221,300 people – 2.67%

31,904 people – 2.56%
The purpose of the study

- to study the prevalence of diabetes mellitus and its complications in Transcarpathian region
Dynamics of diabetes prevalence in Transcarpathia

- Type 1 Diabetes
- Type 2 Diabetes
Proportion of different types of diabetes in Transcarpathia

- 2001: 14.5% Type 1 Diabetes, 85.5% Type 2 Diabetes
- 2006: 13.2% Type 1 Diabetes, 86.8% Type 2 Diabetes
- 2011: 6.24% Type 1 Diabetes, 93.76% Type 2 Diabetes

Legend:
- Green: Type 1 Diabetes
- Red: Type 2 Diabetes
Proportion of insulin therapy of diabetes in Transcarpathia

2001: 16.3%
2006: 14.6%
2011: 15.5%

Treatment with insulin
Non-insulin treatment
Proportion of insulin therapy of type 2 diabetes in Transcarpathia

- 2001: 2.1%
- 2006: 1.7%
- 2011: 9.2%

Legend:
- Treatment with insulin
- Non-insulin treatment
Diabetes complications in Transcarpathia

<table>
<thead>
<tr>
<th>Complication</th>
<th>Total DM</th>
<th>Type 1 DM</th>
<th>Type 2 DM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nephropathy</td>
<td>10.22%</td>
<td>7.79%</td>
<td>2.43%</td>
</tr>
<tr>
<td>Retinopathy</td>
<td>46.00%</td>
<td>9.94%</td>
<td>2.49%</td>
</tr>
<tr>
<td>Cataract</td>
<td>7.53%</td>
<td>13.2%</td>
<td>1.78%</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>28.12%</td>
<td>59.11%</td>
<td>26.04%</td>
</tr>
<tr>
<td>Diabetic foot</td>
<td>3.44%</td>
<td>9.8%</td>
<td>3.01%</td>
</tr>
<tr>
<td>Limb angiopathy</td>
<td>21.41%</td>
<td>19.68%</td>
<td>0.65%</td>
</tr>
<tr>
<td>Gangrene</td>
<td>0.65%</td>
<td>2.7%</td>
<td>0.51%</td>
</tr>
</tbody>
</table>

Total diabetes (DM) incidence: 47.3%
Endocrinological care in Transcarpathian region

- Outpatient visits per 1 endocrinologist per year (*1 000)
- Endocrinologists (per 10 000 diabetic population)
- Inpatient beds (per 1 000 diabetic population)
Diabetes education and podiatric care in Transcarpathia

Diabetic education service, % of diabetes cases
Diabetic foot service, % of diabetes cases
Diabetic amputations, ‰ of diabetes cases
Compensation levels of diabetes in Transcarpathia (4459 cases)
Summary

1. There is **1.8-fold** increase in DM prevalence over last decade
2. The portion of T2DM grew from **85.5%** up to **93.8%** over last decade
3. Insulin treatment of T2DM increased **4.4-fold** but still remained under recommended value (**9.2%** against 20-30%)
4. T1DM complications are 3-6 times more often than T2DM ones
5. Diabetic care is slowly shifting accents to outpatient help though therapeutic load per endocrinologist is excessive
6. Diabetic education and diabetic foot care showed certain improvement in recent years though it remains definitely insufficient (only **11.4%** of controlled DM)
Thank you for attention!
DIRECT AND INDIRECT REVASCULARIZATION OF LOWER EXTREMITIES IN DIABETIC PATIENTS

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The purpose of the study

- to evaluate the effectiveness of different methods of surgical treatment of peripheral atherosclerosis in diabetic patients
Surgical treatment of diabetic patients

- **I group** – 140 patients (femoral-popliteal-tibial reconstruction);
- **II group** – 32 patients (indirect revascularization).
Methods of direct revascularization

- Thrombendarterectomy of femoral or popliteal artery – 53 (37.9%)
- Femoral-popliteal grafting – 56 (40%)
- Femoral-popliteal prosthetics – 9 (6.4%)
- Popliteal-tibial grafting – 22 (15.7%)
Thrombendarterectomy of femoral artery and autovenous plastics – 12 cases
Thrombendarterectomy of Hunter channel and autovenous plastics - 27 cases
Thrombendarterectomy of tibial arteries and autovenous plastics – 14 cases
Autovenous femoral-popliteal grafting – 56 cases
Femoral-popliteal GORE-TEX prosthetics – 9 cases
Below-knee grafting – 22 cases

Popliteal-fibularis autovenous grafting – 4 cases
Popliteal-tibioanterior autovenous grafting – 3 cases
The results of direct revascularizations in diabetic patients

- Thrombosis: 25.7%
- Graft infection / erosion: 2.1%
- Amputation: 15%
- Mortality: 5.8%
Long-term results of direct revascularizations
Methods of indirect revascularizations

- Rotor osteotrepanation of tibia (ROT)
- ROT combined with profundoplastics
Diagnostic approach to indirect revascularizations

- Ultrasound Dopplerography
- Rö-contrast Angiography
- Radionuclide angiography
Intra-arterial radionuclide angiography
Intra-arterial radionuclide angiography (hyper- and hypoperfusion of foot)
ROT of tibia
ROT of tibia (5 incisions)
ROT and fasciotomy
Rö-graphy of shins after ROT

in 3 years

in 9 years
Limb salvage after indirect revascularizations (Kaplan-Meier analysis)
Indirect revascularizations in diabetic patients
The results of indirect revascularizations in diabetic patients

Limb salvage

- Early: 81.3%
- 1 year: 56.3%
- 2 years: 43.8%
Summary

1. Surgical treatment of chronic limb ischemia must include direct and indirect revascularizations.

2. The results of direct revascularizations showed 61.4% graft patency and 75% limb salvage during the 2\textsuperscript{nd} year and 56.4% graft patency and 71% limb salvage up to the 3\textsuperscript{rd} year of follow-up in diabetic patients.

3. The results of indirect revascularizations (mainly ROT) showed 43.8% limb salvage till the end of 2\textsuperscript{nd} year of follow-up in diabetic patients.
Thank you for attention!