The Need of Preventing Smoking and Tobacco Abuse Related Amputations in Bosnia and Herzegovina

Amel Hadzimehmedagic, Haris Vranic, Adnana Talic, Semin Becirbegovic, Fuad Dzankovic, Faris Gavrankapetanovic, Ismet Gavrankapetanovic
Clinic for Orthopedics and Traumatology. Clinical Center of Sarajevo University, Bosnia and Herzegovina

SUMMARY
Last data from 2005 shows that Bosnia and Herzegovina has 37.6% current smokers between 18-65 years. 29.7% of them are female and 49.2% male. In the region of Sarajevo 13.8% pupils are active smokers (16.8% boys, and 10% girls). We have evaluated smoking impact on patients in Clinical Center Sarajevo treated for occlusive arterial disease who had finished their treatment with amputation after exhausting efforts of vascular surgery and angiological therapy measures. Evaluation covers period of ten years (from 1998 to 2007) and patients treated in Vascular Surgery Department and Orthopaedic and Traumatology Department. Average age of patients was 56 year. The youngest patient was 22 and the oldest was 88 year. 70.3% of total number (990 patients) were smokers. From total number of 387 above knee amputations, 159 was done in diabetic patients - smokers which means 41.08%, or 16.06% of total number of amputations. 699 (70.6%) smoking patients underwent major amputation operations (above and below knee amputations). Only 63 patients (6.36%) without major risk factors (smoking and diabetes) had amputation as a final result of treatment. In 52 (5.25%) patients with major or other amputations we have found obliterative thromboangiitis (Buerger’s disease). In 23 patients (2.32%) with amputation we have found other inflammatory thrombotic diseases. In some cases amputation was done as urgent measure in which surgeons had no time for details in diagnostic evaluation. Smoking rates among the general population in Bosnia and Herzegovina are extremely high, and national campaigns to lower smoking rates have not yet begun.

Keywords: smoking, amputation, occlusive arterial disease, tobacco abuse

1. INTRODUCTION
After providing medical and social programs about measures of smoking habit prevention in central and western European region, there is evidence of stabilization of smoking prevalence in adults. Data of about 30% of active smokers is still on concerning level. It is estimated that prevalence in Eastern European region is much higher – about 35% in spite of great number of studies and national health programs.

Several studies have evaluated the association between established as well as emerging vascular risk factors with peripheral arterial occlusive disease (1).

Prevalence of smoking habit in younger population – aged from 13 to 15 years is constantly increasing up to the level of 20%. Adolescents in the age 15-18 years are also making that prevalence continuously increasing. Prevalence of adolescent smoking in Eastern European region is still below 30%, while the same population in western countries is making smoking prevalence higher than 30%. On average, there is about 40% male smokers in Europe. Most of them are living in Russian Federation (63%), Albania (60%), Belorussia (53%). Prevalence of smoking in female population in Eastern Europe is significantly lower (about 10%) than in western countries where the same prevalence is 18.2%. (7)

High level of smoking prevalence in southern and eastern European countries could be explained with traditional influence of Arabic, Turkish and Asian oriental culture, and its impact on meaning of enjoying of tobacco. In the period of patriarchal habits, smoking was exclusively privilege of males. Female smoking was understood as some sort of lascivious behavior, and women with cigarette was proclaimed immoral. In feudal time smoking was the symbol of social status – act which demonstrated someone’s wealth and emphasizes hedonism. That residuum in mind has made myth which still exists in many eastern European countries even in modern times. Opposite to that, economy reforms, legalistic settlement, powerful industrialization, and secularism of west have broke traditional prejudice. Big financial investments from taxes and other resources in social and health programs gave opportunity to work out the strategy in fight against smoking.

Until 1990, trend of smoking prevalence in Bosnia and Herzegovina had better course. War in former Yugoslavia, especially in Bosnia and Herzegovina, by logic itself, could decrease number of smokers but that expected influence of war was missed. Explanation is in paradoxical fact that
In Sarajevo, you could buy 6 books of all Milan Kunderas (in that time he was most popular writer in Europe) romans for only 3 box of cigarettes.

Passionate smoking, unhealthy food, living in hard times filled with stress had very strong influence on health of smokers of all ages. Stopping the war have not decrease prevalence of smoking habit. Last data from 2005. shows 37.6 current smokers in Bosnia and Hercegovina. They are mostly aged 18-65 years. 29.7% of them are female, and 49.2% male. In spite of that production in tobacco industry is constantly raising. During 1998. Production of tobacco was 0.3 kg/person, and in very next year was six time bigger -1.8 kg/inhabitant. Law prohibited distribution and sale of tobacco products near the schools but trend of smoking among pupils is evidently raising. 88.7% pupils—smokers are still buying cigarettes in tobacco stores without asking them for age. 13.8 inquired pupils in the region of Sarajevo are active smokers (16.8% boys, and 10% girls) (9). School lessons are teaching about influence of tobacco smoke and its contents but without visible result. All global studies estimates that over 80% of lower limb amputations were done for dysvascularity (peripheral vascular disease, diabetic or combination of those) (2). We decided to observe final result of atherosclerotic disease caused by risk factors in the region of Sarajevo which covers about half a million of people.

2. MATERIAL AND METHODS

We have evaluated influence of smoking on patients in Clinical Center of Sarajevo. They were basically treated because of peripheral ischemic disease and underwent amputation as final result after exhausting possibilities of vascular surgery and angiology treatment. Evaluation covers period of ten years (1998-2007) and patients treated in vascular surgery department as well as in orthopedic department. As in a many studies, we also have examined the association between peripheral arterial occlusive disease process and risk factor, with time of the patient’s first major limb event (3). Reamputations were encountered in complete follow-up period so we took only last and definitive amputation as a final result. The main aim of this analyze is to emphasize connection of cigarette smoking

Table 1. Frequency of smokers with verified diseases in our sample

<table>
<thead>
<tr>
<th>Type of patient</th>
<th>sex</th>
<th>Above knee</th>
<th>Below knee</th>
<th>Foot amputation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoker diabetic</td>
<td>M</td>
<td>116</td>
<td>94</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>43</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Nonsmoker diabetic</td>
<td>M</td>
<td>67</td>
<td>52</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Smoker nondiabetic (simplex atherosclerosis)</td>
<td>M</td>
<td>92</td>
<td>56</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>8</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Nonsmoker nondiabetic (simplex atherosclerosis)</td>
<td>M</td>
<td>17</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Mb. Buerger - smoker</td>
<td>M</td>
<td>17</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Other inflammatory or thrombotic disease smokers</td>
<td>M</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>6</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>990</td>
<td>387</td>
<td>312</td>
<td>291</td>
</tr>
</tbody>
</table>

Figure 1. Above knee amputations

Figure 2. Below knee amputations
and losing of limbs, even if there are other important connections of smoking and other concomitant diseases which caused death in many of our patients.

In the period of ten years we have found total number of 990 amputations. Period after the war was very impressive because of fact that more then 50% of operations in vascular surgery department were amputations of different levels in spite on efforts made for revascularization, sympatectomy and conservative measures of treatment. Average age of patient was 56 year. The youngest patient was 22 (male–Buerger’s disease – above knee amputation) and the oldest was 88 year (male – nondiabetic smoker – simplex atherosclerosis – above knee amputation). 696 patients (70,3%) of all amputated were smokers.

We found 387 above knee amputations, and 159 of them were in diabetic smoker patients which means 41,08%, or 16,06% of all amputations. Normally, above and below knee amputations are invalidating operations.

Hip disarticulation was performed in 9 cases (0,9%) and we encountered them in above knee amputations. We found 699 such cases (70,6%). Patients who were not weighted with major atherosclerotic risk factors–diabetes and smoking were in better position so we found just 63 such cases which have underwent amputation (6,36%) In many cases radical amputation was immediate response on life threatening condition after long hesitation and waiting for regression of ischemic lesions. Such patients could pay lower price of their disease, but they will brought them in prostration, and even in such condition they did not want to quit smoking. In patients who were walking preoperatively, aggressive amputation was made because of acute atherothrombosis and fail in attempt of revascularization with progressive limb ischemia. Recognizing requirement for further debridement, smoking history, and infrapopliteal occlusion may be predictors of nonhealing and subsequent higher amputation (5). At 52 patients (5,25%) who underwent major or smaller amputations we found obliterative thromboangiitis. At 23 patients–smokers (2,32%) with amputation we found some other inflammatory – thrombotic disease.

3. DISCUSSION

Great number of amputations we found in the period of ten years is surprising just at first sight. Considering all factors of risk, uncontrolled raising prevalence of smoking among younger people, we estimate our future results even worse. In some serial evaluation 79% patients which survive amputation were current smokers or had a prior history of tobacco use (4). Certainly from the point of view of the people not involved in medicine – there is always one unanswered question – Could modern trends in medicine decrease harmful effects of smoking habit? Although we have heard of some efforts of health programs of National and World Health Organization, it seems that their echo is too weak. World Health Organization in cooperation with National Public Health Institute of Finland carried through Quit & Win program 2002 (7). Some authors data, and our data are demanding success of those projects.

Smoking rates among the general population in Bosnia and Herzegovina are extremely high, and national campaigns to lower smoking rates have not yet begun (8).

4. CONCLUSION

Our opinion is that problem of smoking impact should be managed by government with much more rigid measures. Medical treatment of active smoker is just an uncertain and temporary outcome. The most important, and in the same time the simplest conclusion is that peripheral arterial disease or Buerger’s disease could be benign if the patient stops smoking (6).

REFERENCES


Corresponding author: Amel Hadzimehmedagic, MD. Clinic for Orthopedics and Traumatology. Clinical center of Sarajevo University. Bolnicka 25. Tel.: 00387 33 297 600. Amelskih@yahoo.com