Fagerstrom score predicts smoking status six months after hospitalization for acute myocardial infarction: a prospective study

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Background: Cardiovascular patients who quit smoking reduce their risk for future disease and mortality by 1/3 after 2 years. Despite this, more than half of all cardiac patients continue to smoke after being discharged from the hospital. Fagerstrom score is a validated marker of nicotine addiction in smokers.

Purpose: The aim of this study is to investigate the predictive value of the Fargestrom score (F.Sc) as a smoking cessation tool in patients with acute myocardial infarction (AMI) at 3 and 6 months after discharge.

Methods: We investigated a) the predictive value of F.Sc for the smoking status in patients early after AMI and b) the effectiveness of medically assisted smoking cessation programs in the prevention of relapsing to smoking post discharge. In 103 smokers (58±12 years, 79.6% males) we assessed F.Sc during hospitalization for AMI. Patients filled a questionnaire during a face-to-face interview were followed-up at 3 and 6 months. The questionnaire was divided into the following sections: demographics, habits related to smoking, knowledge of smoking risks to health and methods to quit smoking. We recorded the type of MI, number and type of diseased coronary vessels, peak cardiac enzymes levels, left ventricular ejection fraction by echocardiography, intervention during hospitalization, previous medical history. The hospital anxiety and depression scale (HADS) were used to assess the patient’s mental health condition. For the evaluation of nicotine addiction, we use F.Sc.

Results: 59 people were hospitalized for STEMI and 44 for NSTEMI. The peak levels of high-sensitivity (hs)-troponin T during hospitalization were 3843.2 [991.3–9338.8] ng/mL. 100 AMI patients underwent PCI and 3 received thrombolysis. All patients were smoking conventional cigarettes before admission for AMI. 29 (28.2%) of participants had a previous diagnosis of CAD, 55 (53.4%) had hypertension, 49 (47.6%) had hyperlipidemia. The mean HADS-D value was 7.4 ± 1.6, and only 20/103 (19.41%) participants had HADS-D score equal or greater than 10. 28 patients (27.2%) did not quit smoking throughout the 6 months of follow-up (F.Sc: 8.1±1.6), 39 patients (37.8%) ceased smoking at 3 months but relapsed to smoking at 6 months (score:6.8±2.1) and only 34 (33%) had ceased smoking for 6 consecutive months (F.Sc:5.2±2 P<0.05 for all comparisons between subgroups). Out of 73 patients that abstained from smoking the first 3 months post-AMI, those who participated in a smoking cessation program displayed lower rate of relapsing to smoking compared with those who opted to cease smoking without any support (33.3% vs 61.8% p=0.012).

Conclusion: Fagerstrom score was found to be a valid quantitative predictor of smoking cessation in the period of 6-months follow-up AMI. Patients who participated in a smoking cessation program displayed lower relapse rates suggesting the effectiveness of these programs for smoking cessation in AMI patients.
### Association of F.Sc with smoking status

<table>
<thead>
<tr>
<th></th>
<th>All Participants (N=103)</th>
<th>Did not quit smoking for 6 months (N=28)</th>
<th>Quitted 3 months but relapsed at 6 months (N=39)</th>
<th>Quitted smoking for 6 months (N=34)</th>
<th>F-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fagerstrom score</td>
<td>6.7±1.8</td>
<td>8.1±1.6* †</td>
<td>6.8±2.1‡ †</td>
<td>5.2±2</td>
<td>7.02</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

* † ‡: Significant difference

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