ESC European Society of Cardiology

ESC Prevention of Cardiovascular Disease Programme

November 2019

Report on unmet prevention needs: Smoking

Katarzyna Czerwińska-Jelonkiewicz (Acca)

Anna Oleksiak (Acca), Gabrielle McKee (ACNAP), Ian Graham (EAPC), Margrét Hrönn Svavarsdóttir (ACNAP), Joep Perk (EAPC), Izabella Uchmanowicz (ACNAP), Arno Hoes (EAPC)

www.escardio.org/cvd-prevention

EAPC European Association of Preventive Cardiology

Acute Cardiovascular Care Association

ACNAP Association of Cardiovascular Nursing & Allied Professions

Aim: To report the prevalence of active cigarette smoking among patients with high cardiac risk across Europe.

Methods:

Population inclusion criteria were high-risk coronary heart disease (CHD) patient from any country in Europe or region within that country. Searches were carried out with a date limit after 2010 for publication. Studies were included if they reported the percentage of the population that were active tobacco users. The main reasons for exclusion of studies were: combined data from many countries, which could not be separated and data presented that was from a source already used.

The outcome of this report was the percentage of active smokers across Europe. In addition, the rate of persistent smoking was reported. Baseline data within studies was used. Data extraction included, percentage of active smokers, percentage of persistent smokers (those who are active smokers despite the necessity of secondary prevention), main cardiac profile, dates of data collection and countries of data origin. Excel was used to derive average per country from all sources. In papers where data was divided into groups, these were merged.

Definition of active tobacco users was self-reported smoking or carbon oxygen (CO) in breath > 10 ppm [1,2]. Persistent smoking was defined as a current smoking and smoking within month prior to index hospitalization.

Sources:

The results of hospital arms of EUROASPIRE V survey, SURF registry and seven other articles were used in the analysis [1-9]. The majority of studies included patients with established diagnosis of CHD. The hospital arm of EUROASPIRE V included patients during index hospitalization treated with elective PCI or CABG and patients with ACS (STEMI/NSTEMI treated with PCI or CABG, and UA during index hospitalization) as presented by De Bacquer at EuroPrevent 2018 [1]. SURF registry included outpatients with defined CHD (pevious PCI/CABG, ACS or stable angina estabilshed on the basis of functional or imaging tests) [2]. National registries also included patients with established CHD [3-9].

The studies included different ranges of study periods, with the longest periods from 1987 to 2011 [7], followed by data from 1996 to 2008 [3], another including data from 1997 to 2011 [9], and data from 1995 to 2015 [6]. Narrower time ranges were 2000 – 2008 [5], 2006 – 2013 [4], 2011 – 2014 [9] and 2012 – 2013 [2].

Results:

Data from 29 different countries in Europe were available, 20 countries had data from one source, 8 had data from two sources, 1 country - Germany - had data derived from three sources.

Overall, the mean prevalence of smoking acorss Europe was 21.41±8.47% (median – 20.0%) and range between 10.0% in Sweden/Ukraine/UK and 44.6% in Germany. The reported rate of active smokers was relatively well balanced for countries with few sources of data, with differences for Russia (25,5% – SURF, 18% – EUROASPIRE V hospital arm), Italy (13,5% – SURF, 29% – EUROASPIRE V hospital arm) and Germany (44,6% - Fach A, et al., 18% – EUROASPIRE V hospital arm) [1,2,5]. Figure 1

In line with results of the hospital arm of EUROASPIRE V the prevalence of persistent smoking ranged between 34% – 76%, overall 52.92±9.84% of smokers across Europe countries were persistent smokers [1]. In national NORwegian CORonary (NOR-COR) Prevention Study persistent smokers accounted for 56% of all current tobacco users [8].

According to the results of the NORwegian CORonary (NOR-COR) Prevention Study current smoking was significantly more frequent in patients with low versus high education (25% vs. 12%, p < 0.001) and was significantly more frequent in the younger patients (p < 0.001) [8]. Prevalence of smoking increased also with time that has passed since the coronary event [8]. Similar trends were observed in the hospital arm of EUROSPIRE V and in the UK matched cohort study [1,7]. In the FAST-MI Program smoking rate increased over the follow-up period from 32% to 42% [6].

Among active smokers at risk of CHD 42% (11% – 57%) responders reported intention to quit [1]. The hospital arm of EUROSPIRE V reported that the most popular approach to stop smoking was the reduction in number of cigarettes smoked (57%), the second most frequent was abstinence (12%). Pharmacological or psychological therapies were the least popular and substantially underused. Principal reasons for persistent smoking was lack of self-confidence in being successful (54.2%) and not enough awareness of adverse impact of smoking on CHD risk (38.9%) [1].

Conclusions:

Control of smoking in patients with high CHD risk is inadequate. There are relevant discrepancies in the prevalence of active smoking between European countries. Paucity of data concerns prevalence of persistent smoking and measures taken to quit. The rate of smoking is constantly increasing, and it is higher in younger persons and in those with a lower education level. Evidence-based strategies for smoking cessation are underused. One of main arguable reason for that is insufficient support to quit and inadequate awareness of adverse impact of smoking on health.
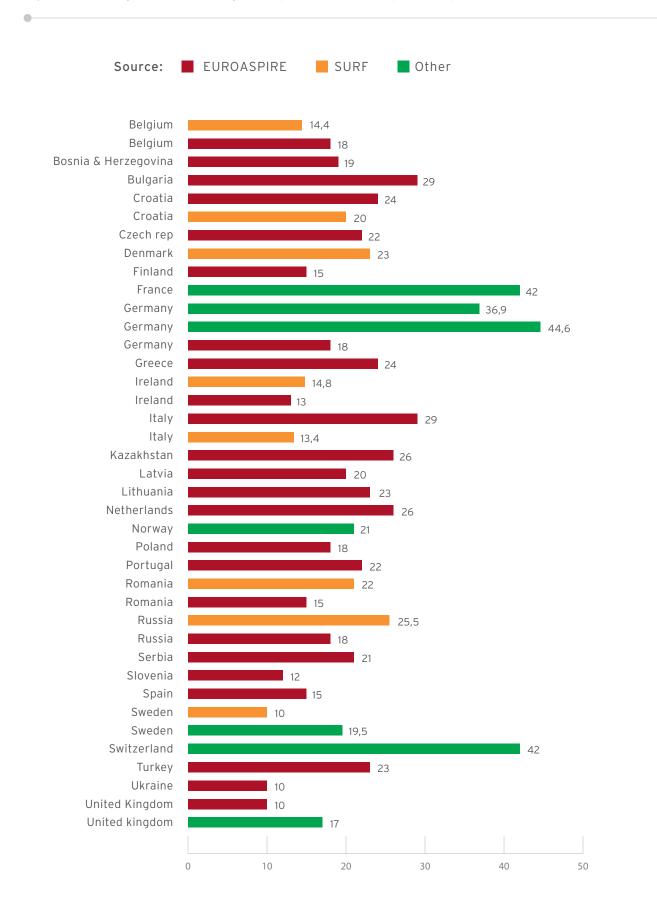
Figure 1: Percentage of active smoking in CHD patients across Europe from separate sources

Source: ■ EUROASPIRE ■ SURF ■ Other

Country	Value	Source
Belgium	14,4	SURF
Belgium	18	EUROASPIRE
Bosnia & Herzegovina	19	EUROASPIRE
Bulgaria	29	EUROASPIRE
Croatia	24	EUROASPIRE
Croatia	20	SURF
Czech rep	22	EUROASPIRE
Denmark	23	SURF
Finland	15	EUROASPIRE
France	42	Other
Germany	36,9	Other
Germany	44,6	Other
Germany	18	EUROASPIRE
Greece	24	EUROASPIRE
Ireland	14,8	SURF
Ireland	13	EUROASPIRE
Italy	29	EUROASPIRE
Italy	13,4	SURF
Kazakhstan	26	EUROASPIRE
Latvia	20	EUROASPIRE
Lithuania	23	EUROASPIRE
Netherlands	26	EUROASPIRE
Norway	21	Other
Poland	18	EUROASPIRE
Portugal	22	EUROASPIRE
Romania	22	SURF
Romania	15	EUROASPIRE
Russia	25,5	SURF
Russia	18	EUROASPIRE
Serbia	21	EUROASPIRE
Slovenia	12	EUROASPIRE
Spain	15	EUROASPIRE
Sweden	10	SURF
Sweden	19,5	Other
Switzerland	42	Other
Turkey	23	EUROASPIRE
Ukraine	10	EUROASPIRE
United Kingdom	10	EUROASPIRE
United kingdom	17	Other

References

1. De Bacquer et al. *EuroPrevent* 2018.

2. Zhao, et al. Simplifying the audit of risk factor recording and control: A report from an international study in 11 countries *European Journal of Preventive Cardiology* 2016 DOI: 10.1177/2047487316647827.

3. Desta L, et al. Incidence, Temporal Trends, and Prognostic Impact of Heart Failure Complicating Acute Myocardial Infarction. The SWEDEHEART Registry (Swedish Web-System for Enhancement and Development of Evidence-Based Care in Heart Disease Evaluated According to Recommended Therapies): A Study of 199,851 Patients Admitted With Index Acute Myocardial Infarctions, 1996 to 2008. *J Am Coll Cardiol HF* 2015;3:234–42.

4. Fach A, et al. Comparison of Outcomes of Patients With ST-Segment Elevation Myocardial Infarction Treated by Primary Percutaneous Coronary Intervention Analyzed by Age Groups (<75, 75 to 85, and >85 Years); (Results from the Bremen STEMI Registry). *Am J Cardio*. 2015;116(12):1802-9. doi: 10.1016/j.amjcard.2015.09.022.

5. Kirchberger I, et al. Long-term survival among older patients with myocardial infarction differs by educational level: results from the MONICA/KORA myocardial infarction registry. *International Journal for Equity in Health* 2014;13:19

6. Puymirat E, et al. Acute Myocardial Infarction Changes in Patient Characteristics, Management, and 6-Month Outcomes Over a Period of 20 Years in the FAST-MI Program (French Registry of Acute ST-Elevation or Non-ST-Elevation Myocardial Infarction) 1995 to 2015. *Circulation*. 2017;136:1908–1919. DOI: 10.1161/CIRCULATIONAHA.117.030798

7. Gitsels LA, et al. Survival prospects after acute myocardial infarction in the UK: a matched cohort study 1987–2011. *BMJ Open 2017*;7:e013570. doi:10.1136/bmjopen-2016- 013570.

8. Sverre E, et al. Unfavourable risk factor control after coronary events in routine clinical practice. *BMC Cardiovascular Disorders* 2017;17:40. DOI 10.1186/s12872-016-0387-z

9. Radovanovic D, et al. Temporal trends in treatment of ST-elevation myocardial infarction among men and women in Switzerland between 1997 and 2011. *European Heart Journal: Acute Cardiovascular Care* 2012;1(3):183–191.

AMGEN   AstraZeneca   ferrer for good   SANOFI   REGENERON