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SUPPLEMENT

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TOBACCO AND CARDIOVASCULAR DISEASE

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Current state of knowledge

Smoking is the leading cause of preventable death in the world, responsible for approximately 7 million deaths per year[1,2]. There are almost 1 billion smokers in the world, the majority of whom are men and live in low- and middle-income countries. Significantly, the incidence of tobacco use among women has been increasing in recent decades, reaching a level of similarity with men in certain regions or countries. The main causes of smoking-related deaths are atherosclerotic cardiovascular disease, chronic obstructive pulmonary disease, and cancer.

Risks

Smoking is a major independent risk factor for cardiovascular mortality, coronary heart disease, cerebrovascular disease, peripheral vascular disease, and heart failure[3,4].

- Smoking 20 cigarettes/day increases the risk of suffering myocardial infarction six times in women and four times in men, compared to those who never smoked[5,6].
- Female smokers have a 25% higher risk of suffering from coronary heart disease than male smokers[7] and they also have a greater likelihood of serious adverse events after an acute coronary syndrome than men[8].
- Smoking or having smoked more than 15 pack-years is associated with more than twofold increase in the risk of developing heart failure compared to never smokers in black people[9].
- Smoking increases the chance of suffering from peripheral vascular disease. Furthermore, patients with peripheral vascular disease that continue smoking have a higher risk of requiring hospitalization due to complications[10].
- The increased risk of cardiovascular disease among smokers compared to non-smokers is observed even with the consumption of very low doses of tobacco (1 cigarette/day), and it escalates in a dose-dependent manner[9, 11-13].
- Second-hand smoking (also called passive smoking) increases the risk of coronary heart disease by at least 20% to 30%, in a dose-dependent manner[14-17].

Recommendations

The benefits of smoking cessation on cardiovascular risk are well established. Among people who do not have coronary heart disease, there is a reduction in the risk of a cardiac event after quitting tobacco, from 7% to 47%[18-20]. The decrease in the risk of cardiac events becomes noticeable shortly after quitting and continues to improve until around 15 years post-cessation. At this point, the cardiovascular risk for former smokers aligns with those who have never smoked[21]. A reduction in the risk of overall death, cardiovascular death, acute myocardial infarction, stroke, and heart failure is achieved with tobacco cessation.

The approach to the problem of smoking is developed across different levels of intervention and is multimodal. The strategy to address the complexities of smoking unfolds across different layers of action and adopts a multimodal approach. It initiates at a foundational level with public policies curbing the production, marketing, advertising, and consumption of tobacco-derived products. It culminates with clinical practice guidelines, informed by evidence, offering recommendations for healthcare practitioners directly engaging with patients who smoke.

Internists intervention has proven to be effective in the treatment of smoking cessation. The stepwise approach of the five "A" steps[22-25] is recommended and outlined as follows:

- "Ask". Question about consumption and exposure to tobacco products (first and second hand) at each consultation.
- "Advise". Advise to quit tobacco, with a short, clear, and personalized message.
- "Assess". Always evaluate the degree of dependence on nicotine and preparation for quitting tobacco.

The Transtheoretical Model of Change[26] can be used, which enables the identification of motivational stages:

pre-contemplation, contemplation, preparation, action, maintenance.

• "Assist". Help/assist smokers to quit the addiction. The implementation of behavior modification counseling, plus pharmacological therapy, is recommended in the majority of patients. In the first line of treatment the following drugs are available (see approval for use in each country):

o Varenicline

o Nicotinic Replacement Therapy in its five presentations: patch, gum, lozenge, nasal spray, inhalation spray.

o Bupropion

o Cytisine, although it is not available in some countries, can be considered an effective, safe, and economical alternative to first line therapy[27, 28].

The choice of medication should be made based on patient preferences, availability, costs, previous experiences, and safety profile of the drugs. Combined therapy of two or more drugs is recommended in severe cases or relapses. There are special considerations to consider in certain populations (pregnant women, patients with psychiatric illness, adolescents, hospitalized patients, etc.).

• "Arrange". Agree on follow-up with the objective of monitoring the process, reinforcing counseling, and rearranging pharmacological treatment.

In summary, smoking poses a significant challenge to health systems, leading to substantial cardiovascular illness and mortality in the population. Quitting smoking is beneficial in any situation or medical condition. Various health interventions have demonstrated their effectiveness in reducing smoking prevalence. Internists have access to reliable and safe tools proven to be effective in addiction treatment. Therefore, their understanding, continuous learning, and practical application in the care of patients who smoke are crucial.

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