EDITORIAL

Reduced smoking - an acceptable goal for the hopeless heavy smoker?

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Smoking represents today by far the largest preventable cause of death. Data suggest annual premature deaths of 420,000 smokers [1] and of 53,000 passive smokers [2, 3] in the USA alone. A necessary step in the reduction of the smoking epidemic is the use of educational prevention programmes for those at risk of starting smoking, and initiatives to promote smoking cessation for smokers. Although there is no doubt about the clear long-term benefit of smoking cessation, both for the smoker as well as for the healthcare provider particularly as regards cancer and chronic obstructive pulmonary disease (COPD), comparatively little is known about the substantial short-term health and economic benefits of smoking cessation. The excess risk of myocardial infarction or stroke decreases by approximately 50% within the first year after stopping smoking [4].

Strategies for smoking cessation programmes are well known today and widely used. Nicotine replacement therapy remains the core of each strategy, particularly for nicotine-dependent heavy smokers (smoking >20 cigarettes-day⁻¹). Sustained quit rates (6 months and 1 yr success rates) are more frequent among light to moderate smokers compared to heavy smokers [5, 6]. Thus, relapse rates in heavy smokers are less favourable. The reasons are in most cases obvious:

- 1) Withdrawal symptoms in heavy smokers are more prominent mostly due to nicotine dependency.
- 2) Smoking cessation among heavy smokers usually requires a higher amount of willingness to change current behaviour and life style.
- 3) Co-existence of addictive dependencies such as alcoholism or even abuse of narcotic drugs is more often seen in heavy smokers. Recent data suggest that smoking diminishes the subjective perception of alcohol intoxication [7]. Development of Dupuytren's contracture is strongly related to alcoholism and to heavy smoking [8]. Smokers with alcohol problems undergoing cessation therapy with nicotine patches showed a significantly lower 1 yr quit rate (close to placebo) when compared to nonalcoholic smokers [9]. Thus, focusing only on smoking cessation without also addressing alcohol or drug dependence has a higher risk of failure.
- 4) Concerns of smokers regarding weight gain after smoking cessation is one of the most intriguing obstacles, particularly in female patients [10–12]. Recent data confirm the significant correlation between smoking and lower body mass index (BMI). Inversely, a higher relative body weight is found with smoking cessation [13].
- 5) Heavy smokers most often need a tailored nicotine replacement strategy. Current available nicotine delivery systems (gum, patch, nasal spray, inhalation, *etc.*) are not

always adequately used or differences among the various nicotine replacement preparations not fully recognized [14]. Use of too low doses and/or an inappropriate choice of nicotine delivery system seem to be the most frequent cause of failure among heavy smokers [14, 15]. A more "intelligent" use of nicotine preparations is required, which fits the individual use and demands of the heavy smoker ("Nicotine replacement science").

6) Smoking cessation therapies and help to cease smoking should be more intensively offered to heavy smokers by institutions where smokers are hospitalized or acutely treated due to tobacco-associated diseases such as myocardial infarction, peripheral angiopathy, COPD *etc.*

7) Heavy smokers who repeatedly fail to quit are at risk of considering themselves hopeless smokers, which contributes to their despair and their unwillingness for another attempt. Very little is known about continuing attempts of smoking cessation in this group of repeatedly relapsed smokers [16].

However, what alternatives are there today for the heavy smoker who repeatedly fails to quit, who does not believe that he will overcome his habit or his nicotine dependency but wants to reduce his risk?

- 1) Switching to light or ultralight cigarettes is heavily advertised by the tobacco industry as a reasonable means to reduce the health risk of cigarette smoking. Current evidence, however, does not suggest that by smoking light cigarettes (nicotine level <1.0 mg and tar level <10 mg) the health risk is significantly reduced, particularly not the cardiovascular risk [17, 18], because smokers usually compensate by changing their smoking patterns and behaviours when switching to light cigarettes [19–21]. Additionally, there are no long-term data available which could better establish the potential benefits of switching to light cigarettes [22]. Ultralight cigarettes which could potentially reduce the tar and CO burden of the smoker are generally not well accepted by heavy smokers as an alternative [23].
- 2) Some cigarette smokers switch to pipe or cigar smoking in the hope that this will reduce their risk. Most recent data [24] confirm that this behaviour reduces the overall amount of tobacco consumption for the smoker by >50%. Consequently, the overall risk of death in pipe or cigar smokers who switched from cigarette smoking 20 yrs ago is reduced by 46% compared to continuing smokers. However, a switch from cigarettes to pipe or cigars still showed a 51% higher risk of death compared to pipe or cigar smokers who have never smoked cigarettes before, because former cigarette smokers usually continue to inhale the smoke even when they are smoking from pipes or cigars, demonstrated by their higher carboxyhaemoglobin saturation [24].
- 3) The concept of "Reduced smoking" is proposed in this issue of the *European Respiratory Journal* by JIMÉNEZ-RUIZ *et al.* [25]. This concept acknowledges the obvious inability

ity of a defined group of heavy smokers largely dependent on and addicted to nicotine to entirely quit smoking. They suggest that in this group of nicotine-dependent smokers with unsuccessful attempts at smoking cessation, the goal of a nicotine replacement might be modified. Rather than aiming for complete cessation with a high probability of failure they would use nicotine replacement only to gradually reduce the daily number of cigarettes smoked. This would lead to a reduced intake of toxic substances and therefore a lower impact on tobacco-related diseases. JIMÉNEZ-RUIZ *et al.* [25] are suggesting that this concept be applied to individuals who: 1) are failing in cessation attempts; 2) want to quit but are unable to do so; 3) do not want to quit but want to reduce smoking. They express hope that individuals who succeeded in reducing their cigarette smoking may later on find it easier to achieve the ultimate goal of entire cessation.

The concept of reduced smoking is very pragmatic. It is based on evidence that there is a dose-dependent risk of smoking in tobacco-related diseases such as cancer, COPD, various cardiovascular diseases and for problems during pregnancy. Only very few studies are available to better quantify the impact of reduced smoking: 1) a decrease of indicators of inflammation in the bronchial mucosa is evidenced by bronchoscopy and bronchoalveolar lavage [26], and a significant decrease of saturated carboxyhaemoglobin can be observed [27]; 2) no long-term clinical studies are so far available; 3) the risk of double nicotine intake (nicotine from smoking and from nicotine replacement) has been probably overemphasized in the past. Data from a 5 yr study showed that individuals taking nicotine gums and who continued smoking did not experience more cardiovascular events compared to a group who took the gum without further smoking [28].

The concept of "reduced smoking" as an alternative goal for the heavy smoker who cannot quit, presented by JIMÉNEZ-RUIZ *et al.* [25] is simple and pragmatic. It may be a valuable tool to address the frustration of patients and therapists in the appropriate clinical setting of heavy smokers. It will alter some of the paradigms and therapy goals of nicotine replacement and smoking cessation therapy. More long-term studies are necessary to better evaluate the clinical and economic value of such an approach.

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