Titolo "Waterpipe use and cancer risk"
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Stato dell'Arte e Razionale

Hookah, also called waterpipe, is a smoking tobacco product that has been traditionally used in many cultures and is becoming increasingly common in Italy and other high-income constituencies. Despite its importance as potential cause of cancer and other chronic diseases, limited data are available in the literature on the detailed aspects of the health effects of hookah smoking, and on biomarkers that underlie such effects, and could be used for personalized risk assessment. In the proposed research, we will conduct an analysis of unprecedented depth of the relationship between hookah smoking and cancer risk. The results of the proposed analysis will provide very strong evidence in favor or against the hypothesis of a higher risk of cancer, and a higher level of tobacco-related in hookah smokers compared to non-tobacco users and cigarette smokers. Since the toxicity of hookah smoking might exceed that of cigarettes, strong data on carcinogenicity of hookah smoking in humans are needed to support evidence-based regulatory decisions, which would be relevant to tobacco control in general.

Historically, hookah smoking has been prevalent in North Africa and West and Central Asia, and a small number of studies have been published on health outcomes of hookah smoking from these regions. Hookah smoke contains many toxic compounds found in cigarette smoke, and hookah smokers appear to be exposed to the same agents as cigarette smokers, probably at higher levels: each puff from hookah has been reported to deliver 12-times as much smoke as a single cigarette puff. Some data suggest that hookah smoking may increase the risk of spreading infectious diseases, such as tuberculosis, hepatitis and herpes. Associations between hookah smoking and cancers of the head and neck, esophagus, lung and bladder cancer have been reported in a few studies: the results are stronger for esophageal cancer. In general, however, most of previous studies suffer from limitations including (i) suboptimal choice of controls (e.g., relatives), (ii) small number of exposed cases and controls, (iii) inclusion of cigarette smokers with hookah smokers, (iv) lack of results on duration or amount of hookah smoking.so further research is needed to confirm these associations.

Obiettivi

1- The primary objective of this study is to determine the association between hookah consumption and common cancers among Iranians based on the amount consumed and the length used by using available national databases.

2- Our other specific objectives are: determining the association between another covariable available in database such as intake of different food groups, alcohol consumption, opium use, socioeconomic status (SES) and etc and cancer risk.

Metodologia (*descrizione del campione, principali tecniche utilizzate, aspetti biostatistici, fattibilità…*)

According to the previous studies, gap of evidence, common cancer in Iran, and availability of databases, we chose to focus on colorectal, bladder, head and neck, gastric, and esophagus cancer. The proposed

analysis will be performed using the data collected within three studies conducted in Iran. 1) The Golestan Cohort Study, 2) The IROPICAN multicenter case-control study, and 3) Pars Cohort Study. The first step of the statistical analysis will consist of a series of cross-sectional analyses among controls to identify correlates of hookah smoking to be included as potential confounders: a preliminary list includes ethnicity, urban residence, SES, cigarette smoking, opium use, family history of cancer, as well as alcohol drinking, body mass index. A liberal significance level (e.g., $p<0.15$) will be used. Subsequently, we will test the hypothesis that hookah smoking is associated with higher risk of developing each of the cancers included in our project by fitting conditional logistic regression models to calculate ORs and 95% CIs or proportional hazards regression models to estimate hazard ratios (HRs) and corresponding 95% Cis according to the type of using databases. Potential confounding will be assessed by adjusting for the covariable suspected for cancers risk. identified as described above, in addition to sex, age and study center that are included as matching factors. In secondary analyses, we will consider the effect of amount and duration of hookah smoking by fitting categorical (e.g., tertiles of exposure distribution among controls) and continuous (linear) variables.

Risultati attesi

The expected outcomes are to describe in detail the association between overall hookah consumption and based on the amount consumed and the length used. In addition, we will produce results by tumor location and histological information according type of cancers such as proximal colon, distal colon, and rectum sub-sites for CRC, age group, and other potential co-factors. The results of this study may lead to the development of evidence-based cancer prevention programs about the impact of hookah consumtion and cancer.

DESCRIZIONE DELLE ATTIVITÀ DELL'ASSEGNISTA

Tasks for the fellow:

- They will work in the management of data to be acquired from the different studies and in the analysis of the data, in collaboration with the data provider.

- They will also collaborate with other partners involved in the Hookah and Cancer Risk Project.

- They will be engaged in conducting descriptive and analytical statistical analyses on cancer risk from hookah smoking using standard epidemiology methods (e.g., multivariable logistic and Cox regression) under SAS, STATA or R

- They will be engaged in writing and publishing paper related to the study.