Recent data demonstrate that WPS immediately causes reduction of peak expiratory flow rate (PEFR) and FEF25%, as well as fractional exhaled nitric oxide (FENO) levels in asymptomatic smokers. However, smoking population include people with and without respiratory complaints, and thus, all smokers cannot be studied as one group. This issue has been addressed by other studies comparing low cost, and also, accompanied by social interaction considered to be less harmful than cigarette smoking, it is of relatively low cost, and also, accompanied by social interaction.

The purpose of our study was to detect the immediate effects of water-pipe smoking on respiratory mechanics and FENO among young smokers with and without mild respiratory complaints.

In this study, we investigated the immediate effects of WPS on lung function, among young regular cigarette and frequent water-pipe smokers, with and without mild respiratory complaints.

In both MRS and NRS subgroups, respiratory system impedance was significantly increased immediately after 30 minutes of WPS. This change was attributable to the significant increase of both peripheral (R20Hz) and central (X20Hz) airways. Additionally, FENO was significantly reduced immediately after 30 minutes of WPS in the whole population studied (-4.78%, p=0.002) and among the two subgroups, significant difference in the changes of X20Hz was identified (-7.57% in MRS and +8.49% in NRS respectively, p=0.007). FENO was significantly reduced in the whole population (-10.1% to -12.61%, p<0.001) both in the whole population (n=50) and each of the two subgroups. Among the two subgroups, significant difference in the changes of R20Hz was identified (-2.39%, p<0.001) but not in the NRS-subgroup (+8.73%, p=0.084). In the control group, no significant changes were detected.

Multiple-frequency respiratory system impedance (Z), resistance (R) and reactance (X) assessed with impulse oscillometry (Viasys Jaeger Multi-frequency respiratory system impedance (Z), resistance (R) and reactance (X) assessed with impulse oscillometry (Viasys Jaeger MasterScreen IOS system), and fractional exhaled nitric oxide (FENO, Eco Medics AG CLD 88 Series chemiluminescence analyzer) were measured in that sequence, before and immediately after 30 minutes of water-pipe smoking, or equal session in the smoking group, using the water-pipe without smoking (control group). Impedometry (Jaeger MasterScreen spirometry system) was performed at the end of the control session.

The study was sponsored by George Behrakis Foundation, Boston, MA, in the frame of HEART II Project.

References