Harm reduction techniques for hookah (shisha, narghile, “water pipe”) smoking of tobacco based products

Tobacco is known to be hazardous for health and particularly when smoked. However, and contrary to a popular common belief, not all forms of tobacco use entail the same risks [1,2]. For instance, smokeless tobacco of the Swedish SNUS type has proved to be an efficient harm reduction tool and smoking cessation method [3]. Tobacco prohibition measures are generally irrelevant as it early appeared from an ambitious programme put forward four decades ago by two of the greatest world tobacco researchers [4]. According to others, coercion often ends up in human and public health catastrophes [5]. Consequently, harm reduction techniques, including the trailblazing one put forward by Kurien and Scofield (K&S) [6], may show the way for shaping the future of tobacco control and should be encouraged. Indeed, and only a few years back, independent researchers have suggested that manufacturers should be urged to produce hookah filters to be inserted to the mouthpiece of the pipe. They also noted that changing the pH and adding resins to the water, among others, could improve its filtering properties [7].

However, ‘K&S’ tobacco harm reduction proposal, based on the use of curcumin/turmeric, might be interesting for cigarette but not necessarily for hookah. The use of the latter has actually represented a sort of natural harm reduction technique over the past centuries. The poor chemical complexity of hookah smoke, its low addictive potential – as reflected, among others, in a recent study in Lebanon [8], its lack of sidestream smoke [9], its collective use, etc., are striking features when compared, to cigarette or bidi smoking in Asia [2,10,11]. Hookahs have not posed any particular public health problem for centuries [9]. The two previously cited tobacco scientists had early stressed that narghile is a “highly efficient filter medium for smoke condensate”, adding that “most remarkable, however, is the filter efficiency of the water in the shish[a], the water-filled main part of the narghile. When the narghile is used with water, as normally practiced, “tar” yield from 1.0 g of tombac is 8.4 mg, and from 1.0 g of tobacco blend, 14.2 mg. In other words, the percentage of “tar” absorbed by the water is 82% in the case of tombac and 91% for the blended tobacco” [12].

Unfortunately and most of the time, such bibliographical references have been dismissed in the antismoking “waterpipe” literature of the last years whereas other prestigious researchers, in different national contexts, had also led their own experiments which all confirmed these earlier conclusions [2]. For instance, almost three decades ago, a world renowned prestigious Indian cancer specialist performed a smoke chemical analysis for tar and nicotine and stressed that “the[se] results were comparable to those for some of the mildest cigarettes in the world market and show the efficiency of water as a filter” [13]. A French team early investigated the compounds playing a role in cilia toxicity and speculated that their water solubility could be an explanation for the widely used narghile by Middle Eastern populations in spite of the great amounts of tobacco consumed in this device [14]. The examples are many indeed [13–17].
hookah might act as an anti-oxidant against a category of short half-life free radicals [25]. On the other hand, scientists have calculated the reduction rate of free radicals in a cigarette that primarily heats tobacco. Interestingly, this product (Eclipse harm reduction cigarette) is based on the principle of hookah smoking under its modern form whereby the tobacco rod (containing glycerol) is heated by a carbon tip instead of being burned as in a classical cigarette. The levels of numerous toxic chemicals are cut down to a great extent and the researchers found that “consistent with an earlier tobacco heating cigarette study, the vapour phase radical yields were 97% less than in a standard reference light “tar” cigarette” (184F) [26,27].

As a conclusion for this review of harm reduction hypotheses, it appears that the main problem identified so far in relation to hookah smoking under its modern form is carbon monoxide [9,28]. Indeed, smoking patterns have changed a lot and smoking too often occurs in ill-ventilated places where, not less frequently, a new kind of charcoal (quick-lighting and non natural) is used as a heating source. Possibilities to reduce the emissions of such a gas within a broad harm reduction framework should have become a public health priority for 10 years now [9]. K&S have usefully blazed this harm reduction trail [6].

References

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A proposed mechanism for the pathogenesis of multiple primary tumours

The pathogenesis of many cancers including multiple primary tumours (MPT) is still not clear. In a previous contribution to this journal, a proposed mechanism was to explain the occurrence of frequently multicentric cancer [1]. This interpretation of tumourigenic mechanism is that the large pool of embryonic cells with the initial somatic mutation increases risk of developing one or more cancer lesions during their lifetime.

In the patients with MPT of the parotid gland, most are histologically classified as Warthin’s tumours [2]. Multiple Warthin’s tumour seems to be similar with sporadic multiple cancers of breast or colon, which is related to the initial somatic mutant cell. During the early stages of embryogenesis of the parotid glands, many epithelial cells, are embedded within the lymphoid component [3]. The histogenesis of this tumour may result from these epithelial inclusions of certain mutant cells, the precursors of the salivary duct–acinar system.

Sporadic multiple tumours of breast or colon is disease of elderly, suggesting that it takes time to complete all mutations in a single cell that becomes the initial cancer cell [1]. This concept can be applied to the multiple occurrence of Warthin’s tumour which also occurs most frequently in older individuals [4].

The hypothetical initial somatic mutation would be found by its presence in independent cancer lesions and in some areas of adjacent salivary gland tissue. DNA in MPT and adjacent normal sali-