

Water pipe Smoking and Genital Wart: Call for Epidemiological Research

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In this issue of BCCR, Ghaemdoust F. and colleagues published a case report about an extensive genital wart in a 21-year woman with a short history of water-pipe smoking (WPS). The warts disappeared following tobacco cessation and lifestyle change¹.

WPS has become a global public health problem during the last two decades, spreading from the Middle East to the United States and Europe². Water pipe smoking has quickly welcomed by the young population, including the school and college students in different countries³. Unfortunately, people assume that water-pipe smoking is 'healthier' than cigarette and other tobacco products because the smoke passed through the water in the base part of the apparatus, while the role of the water in the base is to cool down the steam and the smoke does not filtered by the water. WPS has become a global public health problem among youth, especially among the urban dwellers in Iran. Due to lack of knowledge about health risks of WPS, its prevalence is increasingly both among young men and women in Iran⁴. Although cigarette smoking is not socially acceptable in most communities these days, WPS is usually linked to social gathering and served in café and restaurants. WPS has no stigma compare to cigarette smoking in public places and home, cigarette smoking in particular; WPS is less stigmatized even it is a social convention for

girls in some families.

A session of WPS has been estimated to be equivalent to smoking 100 cigarettes (i.e., five cigarette packs), and lasts much longer than smoking a cigarette. Each puff generates a large volume of smoke and sequentially leads to prolonged inhalation of toxicants⁵. Therefore, the water pipe users who spend a long time in the café may receive higher first- and second-hand exposure compared to cigarette smokers. Despite perceived notion that filtering of water decrease the level of exposure, WPS is thought to be more harmful than cigarette smoking. The primary health risks of WPS is associated with developing lung cancer, respiratory diseases, low birth weight and periodontal diseases. However, the data on the health hazards of WPS is sparse.

The available evidence indicates that the health hazards of WPS can mimic cigarette smoking for the users and their surroundings². Additional health hazards like infectious diseases are expected by WPS because of sharing mouth tips during the social events among friends and families. Previous literature reported that WPS generally increases infectious diseases such as tuberculosis, and spreads viruses such as hepatitis and herpes. Human Papillomavirus (HPV) infection is associated with genital wart and genitourinary cancers especially cervical cancer. The risk factors for HPV infection and



cervical cancer include low socioeconomic status, number of sexual partners, and younger age at the first intercourse. In addition, cigarette smoking is associated with the risk of cervical cancer, likely due to association of genetic, immunologic, and dietary factors on cervical epithelium susceptibility for HPV carcinogenic effect. Although cigarette smoking is independent risk factor for cervical cancer, it may be confounded by other risk factors of cervical cancer including socioeconomic status and risky lifestyle⁶. While WPS may bear all the cancer risks reported for cigarette smoking, the additional risk of cancer might be linked to WPS because of higher dose of exposure to tobacco carcinogens and risk of different infectious diseases. Previous studies have reported associations between WPS and lung infection, tuberculosis, cervicitis, periodontal disease, reactive herpes, toxoplasmosis, hepatitis C, and *H pylori* infection⁷ are risk factors for different cancers, including lung, head and neck, gastrointestinal, liver, and cervical cancers. While the mechanisms postulated for cigarette smoking also apply for the association of WPS and cancer risks, the transmission of infectious diseases between WP users may increase the burden of cancer among WP users. The mode of transmission could be through mouth to mouth transmission by mouth tips during a WPS session. Ultimately, the HPV viruses, may then transmit to the genitourinary tracts through sexual contacts.

In the current case report, while the couples reported no extramarital sexual relationships, the infection could be linked to the transmission of HPV infection either by men or women during their social gathering and WPS. However, this hypothesis requires further investigation. It would be essential to conduct epidemiological study and evaluate the association between WPS and risk of HPV infection, genital wart, or cervical cancer. A detailed and high-quality data

on WPS, especially about the sharing of mouth tip of the WP is needed to study mode of HPV transmission. In such a study, collection of data on history of WPS in all family members would be informative.

This paper introduces a patient with a resistant genital wart based on an incidental finding and came to the attention in the clinic. The patient responded quickly to WPS cessation and behavioural change. The response to WPS cessation postulates a hypothesis that tobacco smoking may increase the viral load and promote persistent infection⁶.

Data on the health impacts of WPS is limited and there might be other infectious diseases in association with WPS and warrant special consideration, It is noteworthy that WPS research should be strengthened to generate sufficient evidence on the health hazards of WPS. Comparison of the results with the available evidence on cigarette smoking is an important strategy in future research.

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