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DETERMINATION OF MYELOPEROXIDASE, HOMOCYSTEINE AND RELATED OTHER PARAMETERS WITH YOUNG SMOKERS OF CIGARETTE AND NARGHILE IN BAGHDAD CITY

Sarah K. Sahi and Bushra H. Ali

Department of Chemistry, College of Education for Pure Sciences, Ibn–Haitham, University of Baghdad, Iraq.
e-mail: iraqi.master.2016@gmail.com

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ABSTRACT : Smoking is the inhalation of smoke tobacco burning that cover with narghile and cigarettes. There are a many problems result smoking such as, deterioration of health in general, undesirable social phenomenon, waste of money and time and stress.This study design to identify the effects of smoking narghile and cigarettes on levels of MPO, HCYand lipidprofil via determination of those parameters in cohort younger of Baghdad city. So to found the correlation coefficient of MPO and those parameters in groups that smoking cigarette and narghiledaily.As well as, to consider the MPO as biomarker to predictor coronary heart diseases. Increased levels of MPO, HCY total cholesterol (TC), triglyceride (TG), very low-density lipoprotein (VLDL) and low-density lipoprotein (LDL) were significant in all groups of smokers compared with nonsmokers. The risk of narghile impact on human health may be similar or worse than cigarette smoking and that risk due to complication of coronary heart disease.

Key words : Myeloperoxidase (MPO), Homocysteine (HCY), smoking.

INTRODUCTION

Smoking is the inhalation of smoke tobacco burning that cover with pipes, narghile and cigarettes. There are a many problems result smoking such as, Deterioration of health in general, undesirable social phenomenon, waste of money and time and stress (Yousif, 2016). So thought smoking habit a physical addiction to tobacco products, smoke composed 2.94 mg Nicotine, 802 mg tar, 145 mg CO and approximately to a smoke of single cigarette, larger quantities of chrysene, phenanthrene and fluoranthene.In fact, the number of puffs and their volume by narghile are about 10 times higher than cigarettes and the concentration of metals is higher. The burning temperature for narghile is 450°C compared to 900°C for cigarette (Yousif, 2016). The peak concentration of nicotine in cigarettes and narghile is the same, but coronary heart disease and lung cancer are the main risk factor for smoking and inflammation is strongly involved in the pathogenesis of atherosclerosis and there are numerous indications that cigarette smoking is associated with conditions of chronic inflammation and oxidative stress (Jacob *et al*, 2013). A potential risk factor for many diseases including cardiovascular disease, coagulation and Alzheimer's disease (Rosenbaum, 2018). Myeloperoxidase (MPO) (EC 1.11.1.7) is a one from the peroxidase group and always expressed in immune cells, for example lymphocytes, neutrophils, cells, plaques and in other body cells (Khan *et al*, 2018). MPO level in smokers are exist significantly higher than nonsmokers. Result of the lack of clarity of the complete biochemical mechanism for neutrophilia's, oxidative stress has emerged as a major player in the release of the MPO enzyme from these cells. Neutrophils are called white blood cells (WBCs), which play a major role in defense against microbial seizures as well as in innate immunity. There are many proteins and enzymes to side the MPO in neutrophils that note as antimicrobial properties such as alkali phosphatase, lysozyme, NXPH, oxides, gelatinase, lactoferrin, collagenase etc. Mpo is the most abundant and important antimicrobial agent mentioned previously, where its 5% of the dry weight of the neutrophils and 25% of the granule azurophilic proteins (Khan *et al*, 2018; Aratani, 2018; Aratani, 2018). MPO is released in both the pharynx compartment and the extracellular environment when neutrophils in the blood and peripheral tissues are activated. It is therefore part of the innate immune system of host defense against invasive microorganisms (Aratani, 2018; Mankhi, 2015).

Homocysteine (HCY) is a non-protein sulfur containing á-amino acid. It is similar to acidic amino acids,