Editorial

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Risk Factors of Lung Cancer Worldwide and in Egypt: Current Situation

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Editorial

Lung cancer was assumed rare disease; now it's considered a public health problem [1]. It's the most common cancer worldwide; there are more than 1.3 million new cases every year [1,2]. It's the first ranked cancer in both sexes and in males [2,3], and the fourth in females. It constitutes 13.0% of all cancers in both sexes. Fifty five percent of the lung cancer cases occur in the developing countries [2].

In Egypt, lung cancer is one of the most common cancers, 5.0%-7.0% of all cancers [4]. It's incidence increased during 1980-2014 [5], from 11.9 to 63.3/100.000 populations for men and from 3.7 to 13.8/100.000 populations for women [1,6,7]. Lung cancer ranks the fifth in males and both sexes, and ninth among females [3]. Also, lung cancer is a leading cause of death (25.0% of all cancer deaths); ranks first in males and second in females [2]. Mortality rate increased from 9.1 to 32.4/100.000 populations and from 2.3 to 12.4/100.000 populations, between 2010 and 2014, among males and females, respectively [1,7]. While, clear reduction regarding lung cancer mortality was reported in developed countries [5].

Lung cancer occurs in four major histopathological types; adenocarcinoma, squamous cell carcinoma (SCC), large cell carcinoma (LCC), and small cell carcinoma [8]. In Egypt, the commonest types are SCC (31.7%), adenocarcinoma (30.9%), and LCC (26.0%) [9].

The significant and independently associated with marked increase of lung cancer risk are old age, male sex, and smoking [10].

The median age of lung cancer patients, in developed countries, is 60 years [6]. In Egypt, mean age of cancer patients is 48 years [11]. Most of lung cancer patients in Egypt were in the fifth (55.3%) and sixth (29.3%) decades [9].

Males have higher lung cancer incidence rates than females worldwide; 3:1 [2,12]. In Egypt, male to female ratio is 3.2:1 [9,11]. However, lung cancer rates in women have been raised because of increased numbers of women smokers [2].

Urban residence is risk factor; in Egypt urban to rural residence ratio is 2.1:1 [9]. This attributed to tobacco smoking, air pollution, and type of occupation.

Smoking is the most common lung cancer risk factor [12], almost all cases are attributed to active (80.0%) and passive (5.0%) cigarette smoking [2]. It's the main risk factor in Egyptian patients [6], 93.5% of them were smokers [9].

Air pollution (car exhaust) and occupational exposure as asbestos and arsenic are important risk factors [2]. In Egypt, 47.2% of the patients were workers in cement construction and production [9]. Environmental pollution is among the most common risk factors [12]. Evidences confirm an association between constituents of ambient air pollution and increased lung cancer mortality [13]. Nitrogen oxides (a measure of air pollution specific to traffic) were reported as significant risk of lung cancer [14]. In developing countries indoor air contamination is resulting from use of unprocessed solid fuels for cooking and heating [15]. Smoky coal was a major determinant of lung cancer. Also, radiation plays a role e.g. radium miners, radon gas, etc. [2].

Chronic inflammation and chronic obstructive pulmonary disease are associated with increased risk of lung cancer [2].

Genetic factors play a significant role in lung cancer susceptibility [10]. Positive family history of lung cancer is useful risk indicator [16]. Five single nucleotide polymorphisms (SNPs) were associated with high susceptibility to lung cancer [10]. Genetic susceptibility; SNPs has confirmed in CYP1A1 m1 and m^2 [17], while family history of malignancies was present among 9.8% of patients [9].

Physical inactivity is associated with increased risk of lung cancer [18]. Also, evidence indicated low consumption of fruits, vegetables [15] and dietary antioxidants [2] are associated with high lung cancer risk.

Incidence and mortality patterns of lung cancer are parallel. In developed countries, advanced technology and awareness have resulted decrease the lung cancer mortality. But, in developing countries as Egypt, much efficient procedures are required [5]. Cancer registration is required for enabling

strategic planning for prevention, treatment, and control [3]. Lung cancer screening is recommended [14], however, early detection using chest X-ray, sputum cytology, and CT scans are not supportive for routine mass screening [1]. Decreases in smoking have manifested as decline lung cancer incidence rates [2].

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