

Lung cancer in Pakistan, where do we stand?

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Abstract

Lung cancer is the most common cancer in males and second most common in females after breast cancer. We have compared our data with the international statistics to see where do we stand. In Pakistan, we do not have a valid central cancer registry at present which can provide a true picture of lung cancer. Therefore, we used statistics of GLOBOCON 2012, in order to evaluate the true burden of lung cancer in our population through the recently established data by PHRC (Pakistan Health and Research Council). Our analysis showed that data depicting true incidence and mortality of lung cancer in Pakistan are lacking. GLOBOCON 2012 placed lung cancer as the 3rd most common cancer in Pakistan while PHRC 2016 placed it as the 10th most common cancer irrespective of the rise in smoking incidence in Pakistan over the past one decade. This calls for an urgent need to formulate a valid central cancer registry in the country in association with the local bodies.

Keywords: Lung cancer, GLOBOCON, PHRC, Cancer registry, Mortality.

Introduction

Lung carcinoma is the most common malignancy in males and second most common in females after breast cancer in the world.¹ According to the American cancer society, carcinoma lung was the leading cause of death in both men and women in 2017 in US.² One out of every 4 deaths is due to carcinoma lung.³ It causes more deaths than carcinoma prostate, breast and colon combined. It was estimated that there were 1.8 million new cases of lung carcinoma in 2012, which caused almost 1.68 million deaths worldwide accounting for almost 19% of total cancer deaths.⁴ We have compared our data with the international statistics to observe our status.

Lung cancer incidence and mortality rates were taken from GLOBOCON 2012.⁵ These data were taken from international agency for research on cancer (IARC), national cancer registries and free data available on the internet. It used different methods to calculate cancer

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incidence, mortality and survival rates in different parts of the world. IARC also makes its data available at world health organization cancer mortality database and its five continents database. Global incidence and mortality rates were standardized to 1960 world standardized population. Coverage of population based registries ranges from 45% in Europe, 78% in Oceania, 95% in North America, 8% in Latin America, 6% in Asia and 1% in Africa.⁴

Lung cancer is the most common cause of cancer death in both men and women globally; about 1 out of 5 cancer deaths are from lung cancer (1.59 million deaths, 19.4% of the total).¹

Common indicators for lung cancer

Incidence

Lung cancer incidence is the number of newly diagnosed cancer cases in a given population, during a specific period of time.

Mortality

Lung cancer mortality is the number of lung cancer related deaths occurring in a specified time period in a given population. Is usually calculated as deaths per 100,000 population.

Life expectancy in Pakistan

Life expectancy of a country is the number of years a person is expected to live in that country from the time of his/her birth. In Pakistan, according to WHO 2015 statistics, life expectancy in Pakistan is Male: 65.7 years and female: 67.4 years, with an average of 66.5 years.⁶ The average age at the time of diagnosis of lung cancer is 71.75 ± 6.8 years.⁷

Discussion

To date we do not have any National Cancer Registry in Pakistan.⁸ Ministry of NHSRC (National Health Services and Regulations) has designated PHRC (Pakistan Health Research Council) to establish a cancer registry by affiliating all major public and private sector hospitals of the country.⁹ At present almost 08 hospitals including Jinnah Postgraduate Medical Center, Karachi, Civil Hospital, Karachi, National Institute of Child Health, Karachi, Nishtar Hospital, Multan, Allied Hospital

Trends of 10 common cancers in Pakistan (2015-2016)

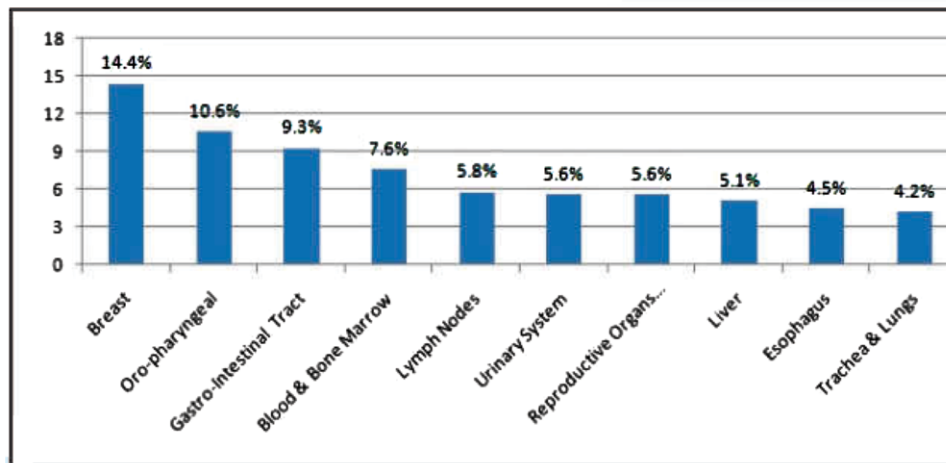


Figure-1.1: Shows 10 common cancers in Pakistan. (Taken from PHRC website.¹⁰)

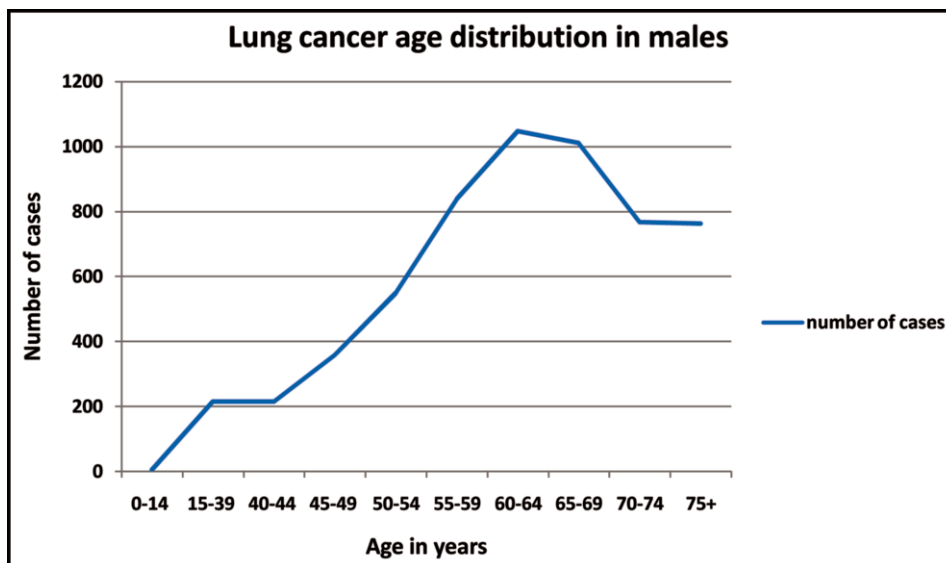


Figure-1.2: Shows peak age of incidence of lung cancer in Pakistani males.

Faisalabad, Bolan Hospital, Quetta, Khyber Teaching Hospital, Peshawar and Armed Force Institute of Pathology, Rawalpindi are sending their data on quarterly basis to PHRC since May 2015.

The initial findings of the data are as follows.

According to PHRC, lung carcinoma is the 10th most common cancer in both genders while 8th most common in males, as shown in figure 1.1⁹ No data exists as to what is the present mortality of lung cancer in Pakistan.¹⁰ According to GLOBOCON, lung cancer is the third most common cancer in Pakistan and is the leading cause of cancer deaths in the country with an estimated

6,800(4.6%) new cases and 6,013 (5.9%) deaths occurring in 2012.¹

There were estimated 1.8 million new cases in 2012 (12.9% of the total), 58% of which occurred in under developed countries. It remained as the most common cancer in men world over (1.2 million, 16.7% of the total) with the highest estimated age standardized incidence in Central and Eastern Europe (53.5 per 100,000) and Eastern Asia (50.4 per 100,000).⁴ Notably low incidence rates are observed in Middle and Western Africa (2.0 and 1.7 per 100,000 respectively).

In men, lung cancer incidence rates are 50% higher in more developed regions (44.7 cases per 100,000 as compared to less developed (30.0 per 100,000) but due to their larger population less developed accounted for 58% of total lung cancer cases. These high rates were predominantly shaped by smoking patterns though air pollution and occupational exposure may play a role. In Pakistan, in year 2012 alone, almost 48,449 cancer deaths (approximately 133 cancer deaths per day) happened, out of which

lung cancer ranked first, accounting for (n = 5097, 10.5%) deaths, followed by lip and oral cavity (n = 4046, 8.4%), non-Hodgkins lymphoma (n = 2719, 5.6%), liver cancer (n = 2682, 5.5%) and leukaemia (n = 2598, 5.4%).¹ According to Globocan 2012, an estimated 63,451 new cancer cases (almost 174 cases per day) were diagnosed in Pakistani males in 2012.⁵

In women, incidence rates are generally lower and the geographical pattern is a bit different, mainly due to differences in exposure to tobacco smoking. Thus highest rates are in northern Europe (23.7) and in Northern America (33.8%) and lowest in middle and Western Africa

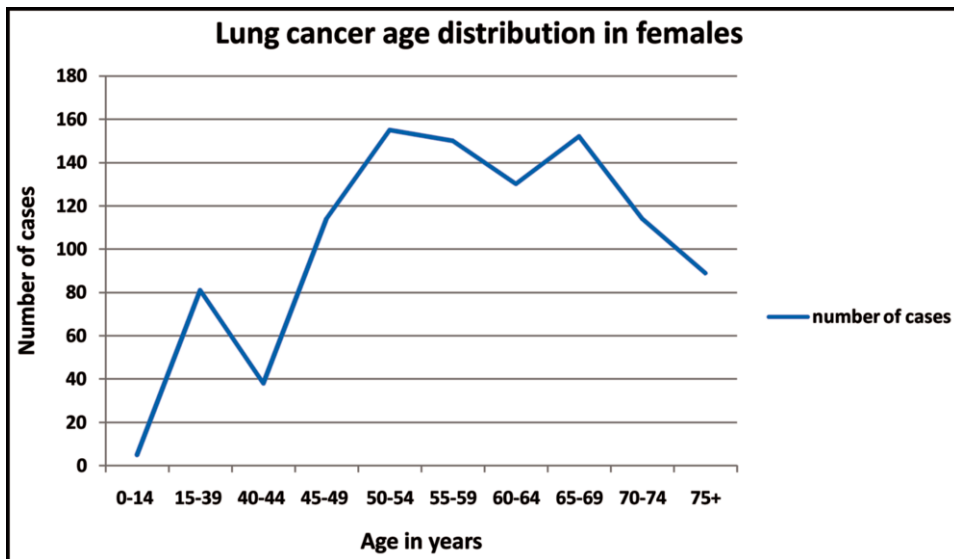


Figure-1.3: Shows age distribution of carcinoma lung in Pakistani females.

Association of Tobacco (Smoked and Smokeless) with Lung and Oro-pharyngeal Cancers

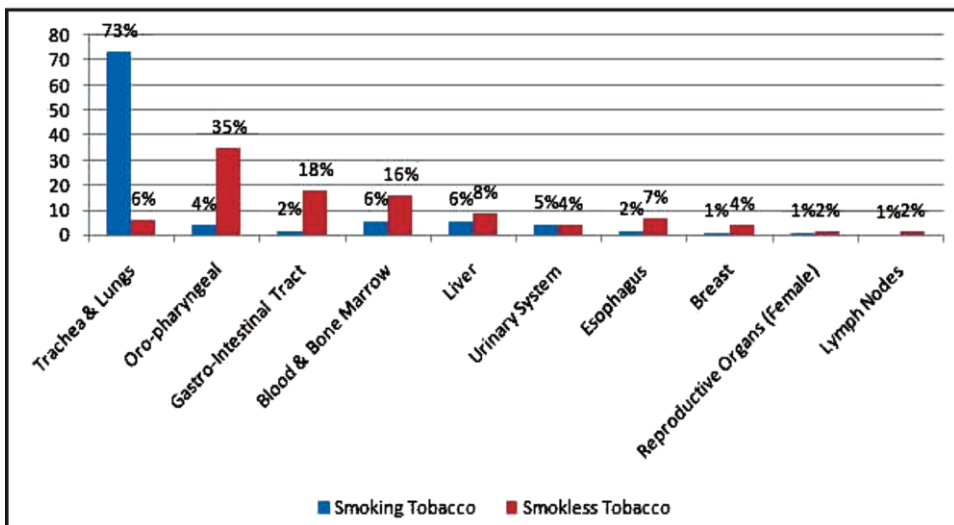


Figure-1.4: Showing association of tobacco with lung cancer. Taken from PHRC website.¹⁰

(0.8 and 1.1 respectively) mainly due to differences in use of tobacco smoking.⁴ According to GLOBOCON 2012, almost 84,590 cases (approximately 232 new cancer cases diagnoses per day) in Pakistani female population.⁵ Out of these top ranked was breast cancer (n = 34038, 40.2%), followed by lip and oral cavity (n = 5693, 6.7%), cervix uteri (n = 5233, 6.2%), ovary (n = 3703, 4.4%) and esophagus cancer (n = 2718, 3.2%). Lung cancer was ranked 12th with (1.2%, n = 1,029) new cases per year.¹

In Pakistani female population, almost 52,664 deaths

(approximately 144 cancer deaths per day) appeared in 2012. Breast cancer was most lethal accounting for (n = 16,232 deaths, 30.8%), followed by lip and oral cavity (n = 3220, 6.1%), cervix uteri (n = 2876, 5.5%), ovary (n = 2726, 5.2%) and esophagus (n = 2507, 4.8%).¹

Lung cancer mainly occurs in older people. About 2 out of 3 people diagnosed with lung cancer are 65 or older, while less than 2% are younger than 45 years. The average age at the time of diagnosis is about 70 years globally.⁴ Average life expectancy of a Pakistani male is 65.5 years. Peak age of incidence for Pakistani males, for lung cancer was found to be 63 years¹, as shown in figure 1.2, which corresponds to the fact that it is a disease of old age. Peak age of frequency world over is 70 years which shows that our average life expectancy is less than peak age of lung cancer.

Average life expectancy for Pakistani females is 67.5 years. Whereas, peak age of frequency of lung cancer, as shown in figure 1.3, was found to be 68.5 years.¹

Survival in lung cancer is poor in most parts of the world and does not vary much between different regions. For example, survival rate is 17% in Australia and 18% in Canada while its 9% in Thailand and 7% in India.⁴ No data exists as to what are survival rates in Pakistani population.

Pakistan is among the top 4 countries of the world with rising tobacco use.¹¹ According to WHO 2011, report, 32.4% males and 5.7% females are current tobacco smokers in Pakistan.¹¹ Among children, 9.9% boys smoke and 1% girls smoke and this trend is on the continuous rise, as Pakistan is in the initial stages of tobacco epidemic.

