Assessment of Factors that Contribute of Lung Cancer

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الخلاصة

دراسة وصفية لتقييم العوامل المساهمة في سرطان الرئة أقيمت الدراسة في المستشفى التعليمي للجراحات التخصصية، مستشفى ابن البيطار ومستشفى ابن النفيس واستغرقت الدراسة الفترة من كانون الثاني ٢٠٠٤ حتى تشرين الأول ٢٠٠٤ وكان هدف الدراسة تقييم العوامل المساهمة في سرطان الرئة وكذلك أيجاد العلاقة بين متغيرات البحث وسرطان الرئة وشملت عينة البحث (٧٠) مريضا اختيرت بطريقة غرضيه (غير عشوائية) .صممت استمارة استبانه لغرض الدراسة وتم تطبيق (الاختبار– و إعادة الاختبار) لثبات الاستمارة من خلال حساب معامل الارتباط (بيرسن) .أما مصداقية الاستمارة فقد تم تحقيقها من خلال الخبراء . جمعت المعلومات بطريقة المقابلة وتم تحليل البيانات من خلال أسلوب الإحصاء الوصفي (التكرار ، النسبة المئوية) والأسلوب الإحصائي الاستنتاجي (مربع كاي) وقد أظهرت الدراسة أن غالبية عينة البحث تتراوح أعمارهم بين (٦٠–٦٩) سنة وغالبيتهم من الذكور بنسبة (٦٥,٧) وان المستوى الثقافي أكثريتهم خريجي الدراسة الابتدائية وغالبيتهم يعملون موظفون حكوميون وقد أثبتت الدراسة أن التدخين يعتبر من اعظم العوامل المساهمة لسرطان الرئة.و أوصت الدراسة في إيقاف أو منع التدخين وإنشاء مراكز خاصة لسرطان الرئة في العراق ومن ثم تنظيم فحص دوري للصدر للعمال والاحتياج إلى ممرضة اختصاص بالسرطان في العراق.

Abstract

A descriptive study to assess of factors that contributes of lung cancer. The study was carried out in Specialized Surgery teaching hospital, Ibin Al- Beetar hospital and Ibin Al- Nafees hospital for the period From January 2004 to October 2004 .The study aimed to assess the factors that contribute to lung cancer and to identify the relationship between the variables of the study with lung cancer. A purposive (non-probability) sample of (70) patients with lung cancer was selected for the study. An assessment form was employed for the purpose of the study. Test- retest reliability was employed through computation of Pearson correlation coefficient. Content validity of the assessment was determined through a panel of experts. Data were collected through the interview technique. Data were analyzed through descriptive statistical approach (frequency and percentage) and inferential statistical approach (chi –square). The study showed that the majority of the study sample were (60-69) years old and most of them were male (65.7%) .The level of education was primary graduate (32.9%) and most of them were working in governmental officer. The result of the study showed that smoking is the majors' factors that contribute to lung cancer. The study recommended stopping smoking, established special center to lung cancer in Iraq, regular chest exam to workers in the industry and need specialist nurse in cancer in Iraq.

Introduction

Lung cancer is a malignant tumor of lung that may be primary or metastatic. Lung cancer is the number one cancer killer among men in the United States and second most common cause of cancer death in women.(1).

The survival rate is low, for in approximately (70%) of patients, the disease has spread to regional lymphatic and other sites at the time of diagnosis. It has been suggested that carcinoma tends to arise at sites of previous scarring (tuberculosis; fibrosis) in the lung. Bronchogenic cancer is (10) times more common in cigarette smokers that non-smokers, the prevalence being related to the length of time and the intensity of smoking. (2)

Word Health Organization classification of lung tumor by histology type. The four major cell types of lung cancer (which differ significantly) are epidermis (squamous cell) carcinoma, small cell (oat cell) carcinoma, adenocarcinoma and large cell (undifferentiated) carcinoma. The different cell types display different biological

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behavior and have prognostic significance. Therefor, the cell type may indicate different approaches to treatment. (3)

Another risk factor is occupational exposure to asbestos, radioactive dusts, arsenic and certain plastics alone or in combination with tobacco smoke. (4)

Tobacco-related carcinogens cause a variety of DNA damage that is repaired by different enzymatic pathways, suggesting that DNA repair plays an important role in tobacco-induced carcinogenesis. (5)

The bronchus and lung cancer are second between the commonest ten cancer by site in Iraq in year (2000) the first one in men and sixth in one in women. The total cases of bronchus and lung cancer in Iraq (855) patients (675 male—180 female). (6)

In (1999) the bronchus and lung cancer are the first between (10) cancer in the (Erbil and Duhok), and the second in the (Al-Qadisyah, Babylon, Nineveh and Al-Sulaimaniyah), and the third in the (The-Qar, Al- Muthana, Baghdad, Al- Anbar and Al-Taamin) governorate in Iraq (7).

Methodology

A descriptive study using the assessment as an approach for the determination of the factors that contributes of lung cancer. The study was carried out during the period of January 2004 to October 2004.The setting of the study included the following: -

-Specialized Surgery Teaching hospital.

-Ibin Al-Beetar hospital.

-Ibin Al- Nafees hospital.

A purposive "non probability" sample of (70) patients with lung cancer was selected out of the three hospitals in Baghdad city. The criteria, upon which the sample selection was employed, included the patients who were diagnosed with lung cancer (male & female). A questionnaire was designed and constructed by the researcher to measure the variables. The questionnaire consisted of (2) parts. Part (I) demographic information sheet and part (II) factors contribute.

The data were collected through the utilization of a constructed questionnaire, interview technique with the patients with lung cancer who is inpatient in the hospital in the selected. Interview took a timetable of (25) minutes for each patient when he stays in hospital. The assessment was conducted during the period of 15th January 2004 to 25th May 2004.

Data were analyzed through descriptive statistical approach (frequency & percentage) and inferential statistical approach (chi- square).

Results

Table (1): Distribution of age and the association between age with lung cancer

Age	Frequency	Percent	Cumulative percent
20-29 years	5	7.1	7.1
30-39 =	10	14.3	21.4
40-49 =	8	11.4	32.8
50-59 =	13	18.6	51.4
60-69 =	23	32.9	84.3
70-80 =	11	15.7	100.0
Total	70	100.0	
χ^2 Obs.16.40	Df 5	χ^2 Crit.11.07	P≤ 0.05

This table shows that majority of age were range(60-69)years who were accounted for (32.9%) and there is a significant association between age and lung cancer.

Table (2): Distribution of gender and association between gender with lung cancer

Gender	Frequency	Percent	Cumulative percent
Male	46	65.7	65.7
Female	24	34.3	100.0
Total	70	100.0	
χ^2obs.6.91	Df 1	χ^2 Crit.3.84	P≤ 0.05

This table indicated that majority of gender was male who were accounted for (65.7%) and there is a significant association between gender and lung cancer.

Table (3): Distribution of educational level and association between educational level with lung cancer

Educational level	Frequency	Percent	Cumulative percent
No read &write	5	7.1	7.1
Read & write	11	15.7	22.8
Primary graduate	23	32.9	55.7
Intermediate =	10	14.3	70.0
Secondary =	14	20.0	90.0
Institutes & above	7	10.0	100.0
Total	70	100.0	
χ^2 Obs.17.42	Df 5	χ^2 Crit.11.07	P≤ 0.05

This table shows that majority of educational level was primary graduate who was accounted for (32.9%) and there is a significant association between educational level and lung cancer.

Table (4): Distribution of occupation and association between occupation with lung cancer

Occupation	Frequency	Percent	Cumulative percent
Government officer	29	41.4	41.4
Free job	23	32.9	74.3
Housewife	6	8.6	82.9
Unemployed	8	11.4	94.3
Student	4	5.7	100.0
Total	70	100.0	
χ^2 Obs.36.14	Df 4	χ^2 Crit.9.48	P≤ 0.05

This table indicated that majority of occupation was from government officer (29) patients who were accounted for (41.4%) and there is a significant association between occupation and lung cancer.

Table (5): Distribution of the site of occupation and association between site of occupation with lung cancer

Site of occupation	Frequency	Percent	Cumulative percent
Tobacco factory	26	37.1	37.1
Brickyards	16	22.9	60.0
Painters	11	15.7	75.7
Woolen	6	8.6	84.3
Gas station	11	15.7	100.0
Total	70	100.0	
χ^2Obs.16.42	Df 4	χ^2 Crit.9.48	P≤ 0.05

This table shows that majority of site of occupation was from tobacco factory (26) patients who were accounted for (37.1%) and there is a significant association between the site of occupation and lung cancer.

Table (6): Distribution of duration of occupation and association between duration of occupation with lung cancer.

Duration of occupation	Frequency	Percent	Cumulative percent
5.0 years	6	8.6	8.6
6.0 =	3	4.3	12.9
7.0 =	4	5.7	18.6
8.0 =	3	4.3	22.9
9.0 =	8	11.4	34.3
10.0 =	20	28.6	62.9
15.0 =	7	10.0	72.9
20.0 =	13	18.6	91.4
25.0 =	6	8.6	100.0
Total	70	100.0	
χ^2 Obs.31.31	Df 8	χ^2 Crit.15.50	P≤ 0.05

This table shows that majority of duration of occupation was (10) years, which were accounted for (28.6%), and there is a significant association between duration of occupation and lung cancer.

Table (7): Distribution of smoking and association between smoking with lung cancer.

Smoking	Frequency	Percent	Cumulative percent
Yes	69	98.6	98.6
No	1	1.4	100.0
Total	70	100.0	
χ^2 Obs.66.05	Df 1	χ^2 Crit.3.84	P≤ 0.05

This table shows that majority of the sample was smoking (69) patients who were accounted for (98.6%) and there is a significant association between smoking and lung cancer.

Table (8): Distribution of number of cigarettes per day and association between number of cigarettes with lung cancer

No. cigarette per day	Frequency	Percent	Cumulative percent
No smoking	1	1.4	1.4
10.0 Cigarettes	4	5.7	7.1
20.0 =	7	10.0	17.1
30 =	18	25.7	42.9
40 =	30	42.9	85.7
60 =	10	14.3	100.0
Total	70	100.0	
χ^2 Obs.49.14	Df 5	χ^2 Crit.11.07	P≤ 0.05

This table shows that majority of number of cigarettes was (40) cigarettes per day for (30) patients which were accounted for (42.9%) and there is a significant association between number of cigarettes and lung cancer.

Table (9): Distribution of the duration of smoking and association between duration of smoking with lung cancer

Duration of smoking	Frequency	Percent	Cumulative percent
No smoking	1	1.4	1.4
6.0 Years	3	4.3	5.7
7.0 =	3	4.3	10.0
8.0 =	6	8.6	18.6
9.0 =	4	5.7	24.3
10.0 =	18	25.7	50.0
15.0 =	26	37.1	87.1
20.0 =	9	12.9	100.0
Total	70	100.0	
χ^2 Obs.61.65	Df 7	χ^2 Crit.14.06	P≤ 0.05

This table shows that majority of duration of smoking was (15) years for (26) patients who were accounted for (37.1%) and there is a significant association between duration of smoking and lung cancer.

Table (10): The mean of score for the items of kind of smoking

	Items	Always	Sometime	Never	MS	Sig.
1-	Smoking with filter	52	17	1	2.73	HS
2-	Smoking without filter	25	34	11	2.20	S.
3-	Manual cigarette smoke	24	32	14	2.14	S.
4-	Narghile (water pipe)	24	28	18	2.08	S.
5-	Pipe	22	26	22	2.00	S.
	Total	147	137	66	2.23	S.

This table indicated that there is highly significant association in item one and there is a significant association on remaining items.

Discussion

The findings of the study that revealed that age range between (20-80) years and that the majority of the study sample age was (60-69) years old who accounted for (32.9%). The table also shows that a significant association between age and lung cancer (Table 1).

Other study of physical activity and the risk of lung cancer in Canada indicated that age range between (20-76) years and the average (68) years and there was a significant association between age with the risk of lung cancer[8].

Regarding to gender the most of the study sample were male accounted for (65.7%) and there was a significant association between gender with lung cancer (table 2).

Other study of air pollution and lung cancer indicated that most of the study sample were male (209 male and 107 female). These study findings thus indicated a significant association between the risk of lung cancer among men[9].

Relative to educational level, (55.7%) from the study sample were had low level of education and there was a significant association between educational level with lung cancer (table 3).

The study from the region of Madrid (Spain) indicated that the percentage of lung cancer increase in mortality associated with (1) year less education and there was a significant association between education and mortality of lung cancer[10].

The majority of the study sample was working in the government officer accounted for (41.4%) and there was a significant association between occupation with lung cancer (Table 4).

The governmental officers, smoking habits were similar to those found in a sample of the general population. An increased incidence of soft – tissue sarcoma was found among governmental officers. This increase resembles that previously found for Swedish governmental officers[11].

This finding presented that most of the study sample working in tobacco industry and brickyards accounted for (37.1%, 22.9%) and there was a significant association between the site of occupation with lung cancer (Table 5).

The study in United State indicated that most of the workers in tobacco industry had lung cancer[12]. In South Africa and India the studies indicated that relationship between workers in asbestos industry (Brickyards) with lung cancer[3].

Regarding to duration of occupation range between (5-25) years most of them were working (10) years in his work and there was a significant association between duration of occupation with lung cancer (table 6).

Other study indicated that duration of occupation in dioxin exposure (10) years had lung cancer more that the other people and increasing risk with increasing exposure was observed for these cancers.[4] The study in Athens (Greece) indicated that findings provide evidence that long-term exposure to air pollution is an important factor in the development of chronic respiratory diseases such as lung cancer[13].

The majority of the study sample was smoking accounted for (98.6%) and there was highly significant association between smoking with lung cancer (Table 7).

Other study shows that (94.4%) from the study sample were smoking in United State when they study risk behaviors of lung cancer[14]. The study in Asturias (Spain) indicated that there was relationship between smoking and lung cancer[15].

Relative to number of cigarettes per day, most of them were smoking (40) cigarettes per day accounted for (42.9%) and there was highly significant association between number of cigarettes with lung cancer (Table 8).

Other study indicated that multivariable logistic regression analysis revealed that any smoking history (past or current) was associated with perceptions of above average risk for developing lung cancer, but only heavier smoking (> or =10 cigarettes per day) [16].

Regarding to duration of smoking, range between (6-20) years most of them were smoking from (10) years accounted for (37.1%) and there was highly significant association between duration of smoking with lung cancer (table 9).

The study in United State indicated that the duration of smoking range between (1-15) year's .The lung cancer risk for long-term smokers of cigarettes was highly significant association. [17]

Highly significant association in item one (smoking with filter) and there was a significant association in the remaining items (Table 10).

The study in United State indicated that most of the study sample was smoking cigarettes with filter and the same thing in the United Kingdom[14].

Recommendations :

1- Regular exam for the chest X-ray to the workers
2- Avoid air pollution.
3- Education program to take care about respiratory system.

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