Patients with lung cancer: 
Risks that are associated to the applied preventive measures

Pacientes con cáncer de pulmón: 
Riesgos que se asocian a las medidas preventivas aplicadas

ABSTRACT. Objectives: To determine the relationship between preventive measures and risk factors in lung cancer. Materials and methods: Quantitative, descriptive, correlational, cross-sectional study. The sample consisted of 187 patients diagnosed with lung cancer. The technique was the survey and as an instrument two questionnaires with reliability of 0.888 and 0.903. Results: The preventive measures (primary, secondary and tertiary) applied by patients with cancer to the lung are 30.48% of good level, 47.06% of regular level and 22.46% of bad level. While the level of risk factors they present is 33.16% at high level, 40.64% at medium level and 26.20% at low level. Conclusions: According to the Spearman test, there is a direct and positive correlation between the preventive measures and the risk factors presented by these patients (0.541, pv 0.001 < 0.01).

Keywords: Pulmonary Neoplasms, Risk Factors, Primary Prevention, Secondary Prevention, Tertiary Prevention

RESUMEN. Objetivo: Determinar la relación que existe entre las medidas preventivas y los factores de riesgo en cáncer de pulmón. Materiales y método: Estudio cuantitativo, descriptivo, correlacional, de corte transversal. La muestra estuvo conformada por 187 pacientes con diagnóstico de cáncer de pulmón. La técnica fue la encuesta y como instrumento dos cuestionarios con confiabilidad de 0.888 y 0.903. Resultados: Las medidas preventivas (primarias, secundarias y terciarias) que aplican los pacientes con cáncer al pulmón son 30.48% de nivel bueno, 47.06% de nivel regular y 22.46% de nivel malo. Mientras que el nivel de factores de riesgo que presentan es de 33.16% en nivel alto, 40.64% de nivel medio y 26.20% de nivel bajo. Conclusiones: Según la prueba de Spearman, existe una correlación directa y positiva entre las medidas preventivas y los factores de riesgo que presentan estos pacientes (0.541, pv 0.001 < 0.01).

Palabras clave: Neoplasias Pulmonares, Factores de Riesgo, Prevención Primaria, Prevención Secundaria, Prevención Terciaria

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INTRODUCTION

Cancer is one of the leading causes of death in the world; producing more than 8.2 million deaths annually.¹ Lung cancer, liver, stomach and breast are the most deaths cause. Worldwide, lung cancer is a very important public health problem; while in Peru, it is currently the most frequent tumor in men and is the main cause of death, because only 15% of cases are diagnosed when they are still localized. In spite of the advances in the treatment throughout the last decades; The survival of patients with lung cancer is poor.²

In developed countries, 90% of this type of cancer occurs in the male population, while 60% to 80% occurs in women.³

In Peru, the incidence of lung cancer has been increasing in both sexes in recent years (31%).⁴

According to the World Health Organization (WHO) approximately 30% of deaths are due to 5 behavioral and dietary risk factors such as high body mass index, reduced intake of fruits and vegetables, lack of physical activity, consumption of tobacco and alcohol.⁵

The main risk factor for the development of lung cancer is tobacco, due to the alteration of the DNA of the cells in the smoker due to the presence of the carcinogenic components of the cigarette such as nitrosamines, benzopyrenes, radioisotopes, radon, among others. Nicotine behaves as an immunosuppressive substance and contributes to carcinogenesis.⁶ The risk is directly proportional to the duration of the habit and the intensity of consumption. Currently, the packet-year is used as a measure of the smoking intensity, considering that there is a greater risk from 20-30 packets-year.⁷

Occupational factors are the second cause of bronchogenic carcinoma attributed to the inhalation of carcinogenic substances in the workplace; In this regard, asbestos is considered the most important occupational carcinogen.⁸

There are some studies that conclude that a diet with few foods of plant origin could increase the risk of lung cancer, especially in people exposed to tobacco smoke; whereas vitamins A and C are protective of the bronchial mucosa, due to their capacity to inactivate the free radicals of carcinogens; being able to reduce the possibility of suffering from lung cancer between 20 and 33%, supported by the antioxidant and anti-proliferative properties associated with those diets rich in carotenes, retinoids, etc.⁹

Studies conducted in Spain, Cuba and Mexico conclude that smoking and chronic obstructive pulmonary disease are the most important risk factors.⁸ Next, radon; declared a human carcinogen, it is considered the second most important risk factor for the development of lung cancer and the first in non-smokers’ being wood smoke another risk factor for lung cancer in the non-smoking population.¹⁰

Nevertheless; In Peruvian reality, all the risk factors mentioned remain in the literature as part of the theory, while it is not investigated, which ones are actually present in the diagnosed patients that attended in a specialized institute and know the magnitude of each of them.

Once identified, the risk factors are often susceptible to change through prevention interventions either minimizing or eliminating them with actions such as consuming healthy foods, stopping the use of tobacco, also avoiding environmental contamination, occupational exposure as chemical substances.¹¹ However, there are risk factors that cannot be reduced or controlled by intervention, since factors related to the individuality of people, including age and sex.¹²

Closely related to this, is the prevention of the disease, which as well as the promotion of health are primary care strategies. Its application allows, according to its level of intervention, to improve the health status of the population in the short, medium or long term despite having some people more sensitive than others to the factors that may cause said disease.¹³

In primary prevention; In order to avoid the onset of cancer, scientists analyze the risk factors and protective factors for cancer.¹⁴ Emphasis is placed on the application of those protective factors and control of risk factors if possible. Here, education should be aimed at fostering a healthy commitment and this is achieved when individuals increase their knowledge about health and disease. Therefore, it is important to communicate about the importance of healthy habits and avoid situations that predispose cancer.¹⁵

For secondary prevention, it is important to detect the disease before it manifests clinically and thus be able to start treatment as soon as possible by early diagnosis of the disease.¹⁶ If cancer is detected and it is due to a genetic alteration, studies are carried out to family members with the same objective.¹⁶

While tertiary prevention is aimed at preventing, slowing or reducing the appearance of sequels of the disease, where the objective is to improve the quality of life of people.¹⁶ It is important in cancer patients because after treatment, they reach notice a difference in their physical, social, psychological and work skills. Here, rehabilitation helps the person to recover and improve the skills to remain as independent and productive as possible by improving their quality of life and physical strength.¹⁷

Despite the detailed nature of written prevention in the literature; At the level of Peru, there are studies that show that the level of culture that the population has about prevention and early diagnosis of cancer is low. The reasons that originate this
cultural level include the little importance that they give to the information on risk factors such as alcohol consumption, smoking, lack of physical exercise or other factors that cause cancer.18-20

In an institute specializing in cancer in the city of Lima, it was observed in the results of an initial contact with patients with lung cancer that their knowledge about the disease is minimal. Patients who come for care are usually people who do not know the factors that cause cancer and do not know how to apply primary, secondary and tertiary preventive measures.

Consequently, the study that determined the relationship between the risk factors present in cancer patients and the preventive measures that they apply was carried out.

MATERIALS AND METHODS

A quantitative approach study was carried out, correlational descriptive level, non-experimental cross-sectional design. The study population consisted of 365 patients diagnosed with lung cancer, treated in a specialized cancer institute in the district of Surquillo (Lima - Peru) in 2017. The sample consisted of 187 patients selected by probabilistic sampling, random type simple. The technique that was used was the survey and the instruments two structured questionnaires of own authorship, validated by expert judges and whose reliability was made using the Alpha statistics of Cron Bach with a results of 0.888 and 0.903. Both instruments total 28 items, 20 of them to identify risk factors in lung cancer and 8 to identify preventive measures for lung cancer

RESULTS

Although the preventive measures of regular level applied by the patients with lung cancer stand out (47.06%); draws attention to 22.46% of patients who apply these measures at a bad level. Similar behavior is replicated if a description is made of the level of application of primary preventive measures (48.6% regular and 19.8% bad), secondary (46% regular and 24.6% bad) and tertiary (46% regular and 20.9% bad).
When trying to contrast the results of this study with similar ones, it is detected that there are no antecedents that have qualified the preventive measures or the risk factors by levels. However, in an analysis by indicator results it can be seen in general terms that the findings of this study coincide with the others that took into account the same risk and prevention indicators. Thus, in the aspect of modifiable risk factors; Acosta in Spain found that smokers accounted for 71.2% of the total cases diagnosed with lung cancer. Smoking patients had a 3.8-fold greater risk than non-smokers of lung cancer. Similarly, the study conducted by García found that patients with lung cancer had a high prevalence of exposure to wood smoke, concluding that this exposure was the main risk factor for lung cancer in the non-smoking population. On the other hand, considering that according to the theoretical basis, deaths from this evil will continue to increase if activities to promote healthy lifestyles that intervene especially in modifiable risk factors such as smoking, passive smoking, exposure to radon and asbestos, the presence of arsenic in water and high levels of environmental contamination. And that, the last mentioned is nothing other than the application of secondary as well as tertiary preventive measures, without neglecting the primary ones; and that these, according to the results, are not at the optimum level; It is necessary to address the problem in both directions, paying attention to the risk factors and the application of preventive measures to counteract this type of cancer and its fatal triggers.

It is concluded that the level of application of preventive measures is significantly related to the level of risk factors presented by patients with lung cancer according to Spearman’s correlation (p <0.01) therefore it is recommended to intervene periodically on the level of knowledge and sensitization of patients about prevention measures and risk factors for lung cancer.

Conflicts of interest: The authors declare that there are no conflicts of interest.
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