



A Narrative Review of Lung Cancer during Pregnancy

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ABSTRACT

Lung cancer, which has been the leading cause of cancer deaths in men for decades, has recently become one of the most common causes in women as well. As women postpone having children, the coexistence of cancer and pregnancy is becoming more common. Nonetheless, lung cancer during pregnancy is a rare condition, with only about 70 cases reported in recent years. Non-small cell lung carcinoma is the most common, accounting for approximately 85% of all cases. The overall survival rate is low. Chemotherapy and/or targeted treatment have had poor results. It has also been discovered that the disease affects the products of conception, with no short- or long-term consequences for the neonate. This article refers to a narrative review of lung cancer diagnoses in pregnant women worldwide.

Keywords: Lung cancer; Pregnancy; Treatment; Prognosis

INTRODUCTION

One in every 1000 pregnancies is complicated by cancer. Women's socioeconomic, professional, and cultural status have changed in the last few decades, particularly in the Western world, shifting the age of first pregnancy to the third decade of their lives. Breast cancer, melanoma, and lymphoma are the most likely to be diagnosed during this time, making them the most likely to complicate pregnancies. Others, such as lung cancer, usually appear later in life and thus rarely coincide with pregnancy. Lung cancer is the second most common type of cancer in women, but it is also the deadliest. The most common histological type of lung cancer is non-small cell lung cancer, which accounts for 80-85% of all gestational lung cancer.

Although smoking is responsible for approximately 90% of lung cancer cases, other well-known causes include radon, asbestos, chromium, family history, and dietary factors. The disease primarily affects older people, with a peak incidence occurring after the age of 65, and only 2% of cases affecting people under the age of 45. The purpose of this article is to provide a narrative review of the available data on gestational lung cancer diagnosis, treatment, and prognosis. In addition,

special mention is made of the uncommon phenomenon of placenta and foetus invasion [1].

DESCRIPTION

Lung cancer mortality in women continues to rise in European countries. There is also sufficient evidence that smoker women are twice as likely as men to develop lung cancer. According to the available data in the literature, less than 50% of gestational lung cancers have a positive smoking history, indicating that tobacco is not the only etiological factor in these young women. Other carcinogenic mechanisms, such as EGFR or ALK activating mutations, could also be involved.

During the postpartum period of pregnancy, nearly 50% of patients received systemic treatment. Platinum-based regimens were the most frequently used combinations. Response rates were low, and maternal survival was short. Overall survival ranged between 3 and 9 months, with 12% of patients dying within the first month after giving birth. Patients with early disease, on the other hand, had a longer survival (12 months or more) [2].

Systemic chemotherapy should be avoided during the first

Received: 01-September-22

Editor assigned: 02-September-22

Reviewed: 14-September-22

Revised: 19-September-22

Published: 26-September-22

Manuscript No: IPGOCR-22-14948

PreQC No: IPGOCR-22-14948 (PQ)

QC No: IPGOCR-22-14948 (Q)

Manuscript No: IPGOCR-22-14948 (R)

DOI: 10.36648/2471-8165.8.9.43

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Citation: Murugan MP, Pully SS (2022) A Narrative Review of Lung Cancer during Pregnancy. Gynecol Obstet Case Rep. Vol.8 No.9:43.

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trimester of pregnancy due to the harmful or lethal effects on the foetus. Certain chemotherapeutic drugs or combinations, on the other hand, can be safely administered during the second and third trimesters. Tyrosine kinase inhibitors are generally not advised to be used while pregnant. To date, six cases have been reported: two with erlotinib, one with gefitinib, one with erlotinib followed by gefitinib, and two with crizotinib given either during or after delivery. There have been no major reactions or foetal abnormalities observed [3-6].

Almost half of the patients (51.4%) were treated postpartum, with the remainder (24%) treated during pregnancy. In 40 patients (60.5%), platinum-based chemotherapy was administered, as well as targeted treatment with erlotinib or gefitinib (4 patients) and crizotinib. All patients who received targeted therapy tested positive for EGFR or EML4-ALK mutations. Palliative radiotherapy was used to treat only three patients. There were no significant responses to systemic chemotherapy, whereas targeted treatment provided disease stability for several months. Nonetheless, there is insufficient evidence to support the use of targeted therapy in gestational cancers [7-9].

CONCLUSION

Invasion of the placenta or foetus is a rare complication in cancer-bearing pregnant women. However, certain tumors, such as melanoma (30%), cancer of unknown primary (22.5%), haematological malignancies (15%), or breast cancer (14%), are more commonly associated with involvement of products of conception. Lung cancer has recently been identified as an additional tumour with a high proclivity for pregnancy products (13%).

Finally, it is emphasised in this narrative review that lung cancer during pregnancy is becoming an emerging issue. Oncologists and gynaecologists should be aware of this coexistence. They should be aware that gestational lung cancer is diagnosed in advanced stages with aggressive behavior, that chemotherapy has poor results, that overall survival is short, and that the placenta and foetus are frequently involved by transmitted cancer cells, necessitating a thorough examination

of the products of conception. It is critical to test for EGFR and ALK activating mutations both retrospectively and prospectively in order to properly treat pregnant mothers with lung cancer.

ACKNOWLEDGEMENT

Not applicable.

CONFLICT OF INTEREST

There are no conflicts of interest by author.

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