

Understanding Paraneoplastic Syndromes: Clinical Manifestations Associated with Tumors

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Opinion Article

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ABOUT THE STUDY

Lung Cancer (LC) has become more common in recent years, and it is now the most common type of cancer in all regions of the world, occurring more frequently in men than in women. PNS are clinical conditions that develop in relation to tumours but have no physical effects from the primary or metastatic tumours. The presence of PNS is unrelated to the size of the primary tumour or the extent of metastases.

It is common in Small-Cell Lung Cancer (SCLC) and other types of lung cancer. PNS develops in nearly one out of every ten patients with lung cancer and may be an indicator for lung cancer diagnosis. It can be seen in later stages of cancer or at the time of cancer recurrence. As a result, identifying these syndromes can aid in the early detection of occult cancers, allowing for timely treatment. PNS reduces the quality of life of cancer patients and thus necessitates specialised treatment. Furthermore, these conditions can be used to detect cancer activity and predict prognosis. This section contains a detailed description of PNS.

The term "Paraneoplastic Syndrome (PNS)" refers to tumor-related symptoms and findings that are independent of metastasis's direct, local extent, or physical effects. PNS develops in response to the effects of hormones and cytokines released by cancer cells, or as a result of cancer cells' immunologic response. In this regard, there is no single mechanism underlying the development of PNS, and potential mechanisms remain unknown. In contrast, several tumor-secreted proteins that may be linked to the development of PNS have been identified in recent years. Patients with PNS may exhibit ectopic production of peptide hormones with hormonal activity and immunological mechanisms.

PNS can occur in both SCLC and Non-Small-Cell Lung Cancer patients (NSCLC). SCLC has a neuroendocrine origin, and PNS is more common in this type of cancer. PNS affects 7%-15% of all LC patients. Systemic symptoms and PNS findings occur in 50% of SCLC patients and nearly 10% of NSCLC patients. PNS develops as a result of LC and worsens the disease's severity. It is thus critical to identify PNS in these patients.

PNS diagnosis and treatment are essential components of Lung Cancer (LC) management. Because PNS can affect multiple organs and systems, it can cause neurological, dermatological, haematological, nephrological, rheumatologic, metabolic, immunologic, and constitutional signs and symptoms.

There has been significant progress in the diagnosis and pathogenesis of PNS over the last century. PNS is more common in LC patients, and it is more common in SCLC than in other types of LC.

PNS can affect almost all systems and can appear before or after cancer diagnosis. The diagnosis of lesions that appear before LC diagnosis can have a significant impact on outcomes by allowing early detection of LC and changing its prognosis through timely treatment. Similarly, PNS recurrences and remissions provide important clues during cancer surveillance.

A clear understanding of the mechanisms underlying PNS development in LC patients, as well as advancements in diagnostic and treatment methods, will significantly improve cancer treatment. Paraneoplastic syndromes are a group of rare disorders that occur when the immune system has a reaction to a cancerous tumor known as a "neoplasm." The immune system is very important in keeping you healthy.