Transcript Details
This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: https://reachmd.com/programs/project-oncology/diagnosing-lcnec-of-the-lung-challenges-and-strategies/36457/

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Diagnosing LCNEC of the Lung: Challenges and Strategies

Announcer:
This is *Project Oncology* on ReachMD. On this episode, we'll hear from Dr. Junaid Arshad, who's an Assistant Professor of Medicine and the leader of the Neuroendocrine Center at the University of Arizona Cancer Center. He is also a clinical and translational scientist with a research focus on upper gastrointestinal cancers and neuroendocrine tumors. He'll be discussing the diagnosis of large cell neuroendocrine carcinoma. Here's Dr. Arshad now.

Dr. Arshad:
So large cell neuroendocrine carcinoma is a highly aggressive neuroendocrine neoplasm of the lung constituting about two to three percent of all lung cancers. Pathologically, it is defined by tumors having large cells with abundant cytoplasm, prominent nucleoli, and neuroendocrine morphology, which typically is organoid nesting, rosette pattern, and palisading. What really distinguishes these large cell neuroendocrine cancers is actually the high mitotic rate, typically over 10 mitoses per 10 high-power field, along with extensive necrosis, and of course, the expression of neuroendocrine markers like synaptophysin and chromogranin on immunohistochemistry. So essentially, it's like a morphologic hybrid, having features of non-small cell lung cancer but biologically very aggressive like small cell lung cancer.

Diagnosing large cell neuroendocrine cancers can be very tricky. It's important that we make the distinction between large cell neuroendocrine carcinoma and some of the other poorly differentiated non-small cell lung carcinomas or even small cell, especially on smaller biopsies with architectural patterns can be distorted. There are less to appreciate. So the tumor may lack definite neuroendocrine morphology or the immunohistochemistry may have a variable expression, so it's a very challenging situation to be in. And also, because large cell neuroendocrine carcinomas are rare, pathologists maybe less familiar with challenges that it's increasing the risk of misclassification, and that can lead to sometimes inappropriate treatment-related decisions too.

I don't know if there is a set pattern to diagnose, but I think a combination approach is often the best method. First and foremost, we have to ensure that a high-quality histologic evaluation with a broad range of immunohistochemical panel is critical, which includes some of the markers synaptophysin, chromogranin and Ki-67. Molecular profiling has been increasingly valuable recently, and there are some studies recently that have shown that large cell neuroendocrine carcinomas can be divided into two types: type 1, which is non-small cell-like molecular subtypes and there is type 2, which is small cell-like, which have different pathological alterations. So whenever the pathology is ambiguous, next-generation sequencing can provide an important clue to refine the diagnosis and help us guide treatment.

Announcer:
That was Dr. Junaid Arshad talking about how we can identify and differentiate large cell neuroendocrine carcinoma. To access this and other episodes in our series, visit *Project Oncology* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!