

EP17.19

Real-world Evidence From A National Lung Cancer Study in Algeria

Late-Stage Presentation and Gaps in Molecular Testing



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Introduction: Lung cancer remains the leading cause of cancer-related mortality worldwide, accounting for approximately 1.8 million deaths annually. In Algeria, data from the National Cancer Registry Network reported 56,319 new cancer cases in 2023, including 3,448 new lung cancer cases, highlighting the substantial national burden of disease. However, comprehensive national-level prospective data describing clinical and molecular characteristics remain limited. This study aimed to provide a comprehensive national characterization of lung cancer in Algeria.

Methods: This national multicenter prospective study included adult patients with newly diagnosed lung cancer enrolled from 19 centers across Algeria from June 2025 to March 2026. Patients with histologically confirmed NSCLC or SCLC were included, while cases with metastases from other primary tumors or without histological confirmation were excluded. Data were prospectively collected using a standardized electronic case report form. Tumors were classified according to WHO criteria and staged using the AJCC 8th edition TNM system. Molecular testing was performed according to disease stage and local availability. Descriptive statistical analyses were conducted using Python. Ethical approval was obtained, and informed consent was secured from all participants.

Results: A total of 1700 patients were recruited during the study period, of whom 1137 patients were included in the present analysis. The study population was predominantly male (82.8%), with females representing 17.2%. The median age was 65 years (range: 29-91 years). Tobacco exposure was reported in 78.2% of patients. Non-small cell lung cancer (NSCLC) accounted for 89.97% of cases, while small cell lung cancer (SCLC) represented 10.03%. Adenocarcinoma was the predominant histological subtype (74.92%). Regarding stage distribution, localized disease was observed in 4.97%, locally advanced disease in 24.13%, and metastatic disease in 70.90% of patients. Molecular testing rates varied across biomarkers, with EGFR testing performed in 53.9%, ALK in 42.4%, ROS1 in 26.5%, and PD-L1 in 46.6% of patients. Among tested patients, EGFR mutations were detected in 20.0%, ALK rearrangements in 8.6%, and ROS1 rearrangements in 6.3%. Among patients tested for PD-L1 expression, 58.80% had PD-L1 <1%, 24.89% had PD-L1 expression between 1-49%, and 16.31% had PD-L1 expression ≥50%.

Conclusions: This prospective national multicenter study provides a comprehensive overview of lung cancer characteristics in Algeria, demonstrating a high burden of metastatic disease at diagnosis and variable access to molecular testing. These findings highlight the need to strengthen early detection strategies and expand molecular diagnostic capacity to improve lung cancer care nationwide.

