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NEOADJUVANT CRIZOTINIB RESPONSE IN ALK-POSITIVE STAGE IIIA-N2 NON-SMALL-CELL LUNG CANCER
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Objectives: Traditionally, in stage III-N2 non-small-cell lung cancers (NSCLCs), neoadjuvant chemotherapy or chemoradiotherapy is the standard of care. However, targeted therapy is still rare in preoperative applications. To our knowledge, this is the first report of an inspiring response of locally advanced NSCLC after induction therapy with Crizotinib.

Case description: A 61-year-old woman is described. Immunohistochemical (IHC) staining results were positive for her anaplastic lymphoma kinase (ALK) protein in the cytoplasm. Crizotinib was prescribed at a dose of 250 mg twice daily for a 4-week period. Radiological assessments were performed at baseline and generally after one month of treatment. The PET/CT scan after 30 days of treatment showed a striking response. We observed an overall response rate of 58.3% (confirmed partial response) and decreases of all mediastinal lymph nodes. Adverse effects were confined to mild nausea (grade 1). Seven days thereafter, right lower lobectomy and mediastinal lymph nodes dissection were planned for the patient. Postoperative recovery was uneventful. Pathological examination of the right lower lobe showed a 1.0-cm rest lesion. Hematoxylin and eosin staining revealed an invasive adenocarcinoma. Three out of 20 lymph nodes revealed metastases.

Conclusion: In conclusion, the response of NSCLC to treatment with Crizotinib can be fast, with a remarkable response after only four weeks of treatment, and can allow for complete tumour removal. Thus, biomarker-guided neoadjuvant treatment should be further evaluated in neoadjuvant settings for locally advanced but operable diseases. Only an appropriately sized, randomized trial of this type can answer this question definitively.

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