Downstaging of advanced lung cancer: A case report on integrative targeted therapy, lifestyle modification, and psychosocial factors

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ABSTRACT

Introduction: Advance-stage non-small-cell lung cancer (NSCLC) with EGFR mutations have been shown to respond well with third-generation tyrosine kinase inhibitors (TKIs) though tumour regression is rare. This case highlights the potential benefit of integrating targeted cell therapy, lifestyle changes and psychosocial intervention in a patient with stage IV NSCLC. **Case Presentation:** A 50-year-old male was diagnosed with stage IIIB EGFR-mutant NSCLC in July 2022 after a CT scan revealed two apical right lung lesions. He was started on Osimertinib as chemotherapy and radiotherapy were contraindicated. However, by November 2022, the disease had progressed to stage IV with malignant pleural effusion. The patient declined pleurodesis and instead adopted comprehensive lifestyle changes, switching to a whole-food, engaging in regular physical activity, practicing stress management, and drawing on faith-based coping strategies. Over 16 months, serial CT scans showed significant tumour regression, downstaging to approximately stage I–II by April 2024, alongside notable improvements in quality of life. **Discussion:** There is currently limited concrete evidence connecting the above to direct tumour regression despite suggestion by literatures that these traits may improve oncology patients' quality of life. Nonetheless, lifestyle modifications and psychological well-being may complement cancer treatments by promoting better immune function, lowering systemic inflammation, and improving adherence to treatment regimens. The significant tumour regression shown in this case was probably a result of a combination of factors, including the therapeutic effectiveness of Osimertinib, lifestyle changes and psychological health. The interaction between targeted therapy and holistic interventions in advanced non-small cell lung cancer requires more research. **Conclusion:** This example demonstrates the potential benefits of treating advanced non-small cell lung cancer (NSCLC) holistically, combining lifestyle and psychosocial therapies with targeted therapy. While individual cases do not establish causation, this highlights the need for more study into comprehensive cancer care strategies to improve patient outcomes.

Keywords: Non-small-cell lung cancer (NSCLC), EGFR mutation, osimertinib, lifestyle intervention, tumour regression