

Neoadjuvant nivolumab with chemotherapy: A miraculous new regime in treatment of resectable lung cancers

Nisha Babar, Syeda Zuha Hasan, Samra Rabbani

Madam, lung cancer is one of the commonly diagnosed causes of cancer mortality and morbidity worldwide, accounting for approximately 1.76 million deaths annually.¹ In the past overall survival in patients with non-small cell lung cancer (NSCLC) remained uncertain. Many treatment regimens were under trial² until, a breakthrough study incorporating neoadjuvant nivolumab with chemotherapy showed tremendous success in phase 3 CheckMate 816 trial.³ Moreover, the FDA has recently approved this therapy for early-stage NSCLC.⁴ Nivolumab is an anti-programmed death 1 (PD-1) human antibody, which restores antitumour T cells activity. Whereas platinum-doublet chemotherapy improves antitumour immunity.³

In this trial, approximately 350 patients were randomly assigned in an equal ratio to receive nivolumab (360 mg) plus chemotherapy or chemotherapy alone for consecutive 3 weeks for three cycles before surgery. Two primary end points were established, event-free survival and complete pathological response. Median event-free survival was 31.6 months with nivolumab plus chemotherapy compared to 20.8 months with chemotherapy alone (hazard ratio for disease progression, recurrence, or death, 0.63; $P=0.005$). The pathological complete response was 24.0% in the nivolumab plus chemotherapy group and 2.2% in chemotherapy alone group (odds ratio, 13.94; $P<0.001$). Also, no surgery-related adverse events were observed with the addition of nivolumab to neoadjuvant

chemotherapy.³

It concludes that nivolumab with chemotherapy showed promising results than chemotherapy alone in patients with resectable NSCLC. However, stage IIIA patients were majorly benefited than stage IB or II patients.³ Therefore, it is imperative that more clinical trials must be conducted to obtain maximum benefit at all possible stages and a proper follow up for data is needed to draw better conclusions.

Submission completion date: 14-05-2022

Acceptance date: 14-07-2022

Disclaimer: None to declare.

Conflict of Interest: None to declare.

Funding Disclosure: None to declare.

References

1. Thai AA, Solomon BJ, Sequist LV, Gainor JF, Heist RS. Lung cancer. *Lancet*. 2021; 398:535–54. doi: 10.1016/S0140-6736(21)00312-3.
2. Sainz LG, Castellanos PC, Higuera O, Carpeño JC. Neoadjuvant Chemotherapy in Patients with Resectable Non-small Cell Lung Cancer. *Curr Treat Options Oncol*. 2021; 22:91. doi: 10.1007/s11864-021-00885-6.
3. Forde PM, Spicer J, Lu S, Provencio M, Mitsudomi T, Awad MM, et al. Neoadjuvant Nivolumab plus Chemotherapy in Resectable Lung Cancer. [Online] [Cited 2022 April 11]. Available from: URL: <https://pubmed.ncbi.nlm.nih.gov/35403841/>
4. The ASCO Post Staff. FDA approves neoadjuvant nivolumab and platinum-doublet chemotherapy for early-stage non-small cell lung cancer. FDA [Online] [Cited 2022 Mar 4]. Available from: URL: <https://www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-neoadjuvant-nivolumab-and-platinum-doublet-chemotherapy-early-stage-non-small-cell-lung#:~:text=On%20March%204%2C%202022%2C%20the>

.....
4th Year MBBS Student, Dow International Medical College, Karachi, Pakistan.

Correspondence: Nisha Babar. Email: nishaabab@gmail.com

ORCID ID. 0000-0003-2417-5553

DOI: 10.47391/JPMA.6912