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Commentary

Stages of Non-Small Cell Lung Cancer and Antineoplastic Therapy

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DESCRIPTION

Surgery may offer the best chance for a cure for individuals with stage IB (>4 cm tumour size) or stage II Non-Small Cell Lung Cancer (NSCLC). Surgery for stages IB and II is typically appropriate, either with or without adjuvant treatment depending on risk factors.

After surgical resection, adjuvant chemotherapy offers an absolute increase in 5-year survival of around 5%, with median 5-year overall survival rates ranging from 45-70%. Adjuvant chemotherapy is not beneficial following surgery for stage I disease; the advantages of adding adjuvant chemotherapy rise with disease stage.

SBRT, or stereotactic body radiotherapy, is a treatment option for early-stage NSCLC tumours that are less than 5 cm in size and uninvolved in lymph nodes. For patients with early-stage NSCLC who are not surgical candidates and those with major co-morbidities, this has emerged as a realistic and efficient treatment. High local control rates (around 90%) for these individuals are shown in studies. However, the reported studies' SBRT procedures have varied.

The objective of chemotherapy for stage IB (>4 cm), stage II, and stage IIIA NSCLC is to finish three regimens. The following neoadjuvant chemotherapy regimens are acceptable:

- Nivolumab 360 mg IV q3 weeks, in addition
- Three cycles of platinum-doublet chemotherapy given every three weeks
- What constitutes platinum-doublet chemotherapy is as follows:
- Area Under the Curve (AUC) 5 or 6 for carboplatin and paclitaxel (175-200 mg/m^2) (any histology) or
- Non-squamous histology with pemetrexed 500 mg/m^2 and cisplatin 75 mg/m^2
- Cisplatin 75 mg/m^2 and gemcitabine 1000-1250 mg/m^2 (squamous histology)
- For a target of four cycles, patients with comorbidities or individuals who cannot take cisplatin may instead choose one of the following regimens:
- Paclitaxel 200 mg/m^2 IV on day 1 and carboplatin AUC 6 IV on day 1 every 21 days
- Gemcitabine 1000 mg/m^2 IV on days 1 and 8 of every 21 days together with carboplatin AUC 5 IV on day 1
- Pemetrexed 500 mg/m^2 IV on day 1 and carboplatin AUC 5 IV every 21 days

Patients with totally resected stage IB-IIIA EGFR mutation-positive NSCLC who have received prior adjuvant chemotherapy or who are ineligible for platinum-based chemotherapy should take into account the following:

- Osimertinib 80 mg PO daily, for up to 3 years, or until disease recurrence or intolerable toxicity
- Atezolizumab 840 mg intravenously every two weeks, 1200 mg intravenously every three weeks, or 1680 mg intravenously every four weeks for a period of up to a year (for completely resected stage IIB-IIIA or high-risk stage IIA PD-L1 1% NSCLC in patients who have previously undergone adjuvant chemotherapy).

Stage IIIa or IIIb disease

If the patient is not a candidate for surgery, stages IIIa and IIIb NSCLC are commonly treated with a chemotherapy and radiation regimen. Selected individuals, mostly those with stage IIIa cancer, may be candidates for surgery; they would either get chemotherapy alone or chemotherapy combined with radiation therapy prior to surgical resection.

Although chemotherapy and radiation therapy are best administered simultaneously, individuals with poor performance status may instead get these treatments one after the other. A multidisciplinary tumour board should decide whether to use concurrent chemoradiation on a patient instead of surgery, radiation, or chemotherapy separately (including a medical oncologist, radiation therapist, and thoracic surgeon)

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