Perioperative Therapy in Early-Stage Lung Cancer

Neoadjuvant Therapy
Neoadjuvant therapy refers to any treatment that is given for cancer before surgery, with the goal of making the surgery more likely to be successful and improve the chance of long-term survival. The most common setting for neoadjuvant therapy is when a patient with early-stage lung cancer receives systemic therapy prior to surgery with any of the following:
- Chemotherapy, often given for 3 to 4 months
- Immunotherapy, for 2 months (as currently approved)

The benefit of neoadjuvant therapy is that it provides treatment at the earliest opportunity, enables completion of therapy quickly, potentially leads to a less extensive surgery being required, and allows for measurement of systemic therapy effect on visible disease, which is correlated with long-term outcomes.

Adjuvant Therapy
Adjuvant therapy refers to any treatment that is given for cancer after surgery, with the goal of more patients being alive later. The most common setting for adjuvant therapy is when a patient with early-stage lung cancer undergoes surgery, which is then followed by additional systemic (whole body) treatments, which may include:
- Chemotherapy, typically given for 3 months
- Immunotherapy, for up to a year (as currently approved)
- Targeted therapy, for up to 3 years (as currently approved, if an EGFR alteration is present in the tumor as a driver alteration)

The benefit of adjuvant therapy is that surgical removal of a cancer is performed sooner, the extent of cancer spread is better assessed, and there is an opportunity while a patient is recovering from surgery to test for molecular markers to determine the best course of further treatment. Adjuvant therapy can therefore be precisely tailored to the needs of a patient based on the prognosis of their individual cancer to provide an optimal recipe for cure.

Why Do I Need Additional Therapies Along With Surgery?
The basic concept of either neoadjuvant or adjuvant therapy is that a systemic therapy affects the whole body and may reach cancer cells in the circulation or distant tissues that are not seen on scans or by a surgeon. These so-called micrometastases have the potential to grow into visible, recurrent cancer if left untreated because they were impossible to detect earlier.

How Do I Know If These Therapies Worked?
The degree of response to neoadjuvant therapy can be assessed by tumor shrinkage seen on scans or by the extent of cancer cell death seen under a microscope from samples of the tumor or lymph nodes. In many cancers, a good neoadjuvant therapy is correlated with favorable responses. A pathologic complete response, in which there is no cancer seen in surgically removed tissue after neoadjuvant therapy, indicates a high probability of cure in many cancer settings. For adjuvant therapy, response assessment can be based on scans or, potentially in clinical trials, identifying circulating tumor DNA that may predict a relapse of the cancer.

FOR MORE INFORMATION
National Cancer Institute
US Food and Drug Administration
www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-osimertinib-adjuvant-therapy-non-small-cell-lung-cancer-egfr-mutations
MedPageToday
www.medpagetoday.com/hematologyoncology/lungcancer/97534

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