Testing the Addition of a Type of Drug Called Immunotherapy to the Usual Chemotherapy Treatment for Non-small Cell Lung Cancer, an ALCHEMIST Treatment Trial (Chemo-IO [ACCIO])

Status: RECRUITING

Eligibility Criteria

Age: 18 years and over

This study is NOT accepting healthy

Healthy Volunteers: volunteers

Inclusion Criteria:

* A female of childbearing potential is a sexually mature female who: * Has not undergone a hysterectomy or bilateral oophorectomy; or * Has not been naturally postmenopausal for at least 12 consecutive months (i.e., has had menses at any time in the preceding 12 consecutive months) * Local testing of EGFR with no EGFR exon 19 deletion or EGFR L858 R mutation (applicable to non-squamous patients only) * Local testing of ALK with no ALK rearrangement (failed testing is considered negative) (applicable to non-squamous patients only) * Local testing of PD-L1 immunohistochemistry (IHC) using one of the following assays: DAKO 22C3, DAKO 28-8, EIL3N or SP263 * Completely resected stage IIA, IIB IIIA or IIIB (T3-4N2) non-small cell lung cancer (NSCLC) (squamous or non-squamous) with negative margins (complete R0 resection). Patients will be staged according to the 8th edition of the American Joint Committee on Cancer (AJCC) Staging Manual, 2017 * Note: Patients with pathologic N2 disease, completely resected, are eligible. However, patients known to have N2 disease prior to surgery are not eligible; guidelines do not recommend up-front surgery for this population * Complete recovery from surgery. Registration to A081801 must be 30-77 days following surgery * No prior neoadjuvant or adjuvant therapy for current lung cancer diagnosis * No prior allogeneic tissue/solid organ transplant * Patients must NOT have uncontrolled intercurrent illness including, but not limited to, serious ongoing or active infection, symptomatic congestive heart failure, uncontrolled cardiac arrhythmia, unstable angina pectoris, that would limit compliance with study requirements * No current pneumonitis or history of (non-infectious) pneumonitis that required steroids * Human immunodeficiency virus (HIV)-infected patients on effective anti-retroviral therapy with undetectable viral load within 6 months are eligible for this trial * Age \>= 18 years * Eastern Cooperative Oncology Group (ECOG) performance status (PS): 0-1 * No active auto-immune disease that has required systemic treatment within the last 2 years (e.g., disease-modifying agents, corticosteroids, or immunosuppressive drugs). Replacement therapy (e.g., thyroxine, insulin, or physiologic corticosteroid release therapy for adrenal or pituitary insufficiency) is not considered a form of systemic treatment * Not pregnant and not nursing, because this study involves an agent that has known genotoxic, mutagenic and teratogenic effects * Therefore, for women of childbearing potential only, a negative pregnancy test done =\< 7 days prior to registration is required * No patients with a "currently active" second malignancy that is progressing or has required active treatment within the last 3 years. Participants with non-melanoma skin cancers, low grade or low-risk cancers, or stage I malignancies not requiring systemic therapy (e.g., prostate cancer requiring only observation or superficial bladder cancer), or carcinoma in situ (e.g., breast carcinoma or cervical cancer in situ) that have undergone potentially curative therapy are eligible * No hypersensitivity (\>= grade 3) to pembrolizumab and/or any of its excipients * No live vaccine within 30 days prior to registration. Examples of live vaccines include, but are not limited to, the following: measles, mumps, rubella, varicella/zoster (chicken pox), yellow fever, rabies, Bacillus Calmette-Guerin (BCG), and typhoid vaccine. Seasonal influenza vaccines for injection are generally killed virus vaccines and are allowed; however, intranasal influenza vaccines (e.g., FluMist) are live attenuated vaccines and are not allowed * No known hepatitis C virus (defined as HCV ribonucleic acid \[RNA\] \[qualitative\] is detected) infection or known history of hepatitis B (defined as hepatitis B surface antigen \[HBsAg\] reactive) * Absolute neutrophil count (ANC) \>= 1,500/mm\^3 * Platelet count \>= 100,000/mm\^3 * Hemoglobin \>= 8 gm/dl * Calculated (Calc.) creatinine clearance \>= 45 mL/min * Total bilirubin =\< 1.5 x upper limit of normal (ULN) * Aspartate aminotransferase (AST) / alanine aminotransferase (ALT) =\< 2.5 x upper limit of normal (ULN)

Conditions & Interventions

Interventions:

PROCEDURE: Biospecimen Collection, DRUG: Carboplatin, DRUG: Cisplatin, PROCEDURE: Computed Tomography, PROCEDURE: Echocardiography Test, DRUG: Gemcitabine Hydrochloride, PROCEDURE: Magnetic Resonance Imaging, OTHER: Observation Activity, DRUG: Paclitaxel, BIOLOGICAL: Pembrolizumab, DRUG: Pemetrexed Disodium, OTHER: Questionnaire Administration

Conditions:

Lung Non-Small Cell Carcinoma, Lung Non-Small Cell Squamous Carcinoma, Lung Non-Squamous Non-Small Cell Carcinoma, Stage II Lung Cancer AJCC v8, Stage IIIA Lung Cancer AJCC v8, Stage IIIB Lung Cancer AJCC v8

More Information

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