Testing the Addition of Radiation Therapy to the Usual Treatment (Immunotherapy With or Without Chemotherapy) for Advanced Stage Non-small Cell Lung Cancer Patients Who Are PD-L1 Negative

Status: RECRUITING

Eligibility Criteria

Age: 18 years and over

This study is NOT accepting healthy

Healthy Volunteers: volunteers

Inclusion Criteria:

* Histologic or cytologic diagnosis of stage IV NSCLC using version American Joint Committee on Cancer (AJCC) 8th edition (includes M1a, M1b, and M1c stage disease). Patients with stage IIIB and IIIC disease are eligible if they are not a candidate for combined chemotherapy and radiation * PD-L1 expression tumor proportion score (TPS) \< 1% in tumor cells. If PD-L1 expression TPS is unevaluable or the testing could not be completed patients are not eligible. The assay must have been performed locally by a Clinical Laboratory Improvement Act (CLIA) (or equivalent) certified laboratory. The type of assay will be recorded * For non-squamous patients only (adenocarcinoma or adenosquamous): EGFR, ALK and ROS1 testing must be done locally. No patients with known actionable EGFR mutations (except exon 20 insertion), ALK or ROS1 mutations that can be treated with oral tyrosine inhibitors * Measurable disease based on RECIST 1.1, including at least two cancerous deposits. At least one deposit must be RECIST measurable (and not to be irradiated) while at least one OTHER deposit (measurable or non-measurable) must meet criteria for three 8 gray (Gy) doses of radiation * Age \>= 18 years * Eastern Cooperative Oncology Group (ECOG) performance status 0-2 * No more than three weeks of treatment with systemic chemotherapy or immunotherapy for advanced NSCLC * No more than three weeks of treatment with checkpoint inhibitors for metastatic lung cancer * No treatment with chemotherapy or immunotherapy for non-metastatic disease (e.g., adjuvant therapy) within 6 months prior to registration * No systemic immunostimulatory or immunosuppressive drugs, including \> 10 mg prednisone equivalent per day, within 2 weeks or 5 half-live of the drug, whichever is shorter. Steroid premedication per local standard is allowed * \>= 1 week prior to registration since palliative (including central nervous system \[CNS\]) radiotherapy to any tumor site * No prior allogeneic tissue/solid organ transplant * No 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 of registration * No active auto-immune disease that requires systemic therapy within 2 years prior to registration. Replacement therapy (e.g., thyroxine, insulin, or physiologic corticosteroid release therapy for adrenal or pituitary insufficiency) is not considered a form of systemic treatment and is allowed * No known history of hepatitis B (defined as hepatitis B surface antigen \[HBsAg\] reactive) or known hepatitis C virus (defined as HCV ribonucleic acid \[RNA\] \[qualitative\] is detected) infection * No patients with symptomatic central nervous system metastases and/or carcinomatous meningitis. Patients with small asymptomatic brain metastases are eligible as are patients with treated brain metastases that require no steroids * Not pregnant and not nursing, because this study involves radiation as well as potentially chemotherapy which have known genotoxic, mutagenic and teratogenic effects. Therefore, for women of childbearing potential only, a negative urine or serum 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 2 years. Participants with non-melanoma skin cancers or carcinoma in-situ (e.g., breast carcinoma, urothelial carcinoma or cervical cancer in situ) or localized prostate cancer (T1-3, N0, M0) that have undergone potentially curative therapy are eligible * No hypersensitivity (\>= grade 3) to immunotherapy 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 \[registered trademark\]) are live attenuated vaccines and are not allowed. COVID-19 vaccine is allowed * Absolute neutrophil count (ANC) \>= 1,500/mm\^3 * Platelet count \>= 100,000/mm\^3 * 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: Biopsy Procedure, PROCEDURE: Biospecimen Collection, PROCEDURE: Computed Tomography, PROCEDURE: Echocardiography Test, BIOLOGICAL: Ipilimumab, PROCEDURE: Magnetic Resonance Imaging, BIOLOGICAL: Nivolumab, PROCEDURE: Positron Emission Tomography, OTHER: Quality-of-Life Assessment, RADIATION: Radiation Therapy

Conditions:

Lung Adenocarcinoma, Lung Adenosquamous Carcinoma, Lung Non-Small Cell Carcinoma, Stage IIIB Lung Cancer AJCC v8, Stage IIIC Lung Cancer AJCC v8, Stage IV Lung Cancer AJCC v8

More Information

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Principal Investigator:

Phase: PHASE2

IRB

Number:

System ID: NCT04929041