Combining Radiation Therapy With Immunotherapy for the Treatment of Metastatic Squamous Cell Carcinoma of the Head and Neck

Status: RECRUITING

Eligibility Criteria

Age: 18 years and over

This study is NOT accepting healthy

Healthy Volunteers: volunteers

Inclusion Criteria:

* STEP 1 REGISTRATION: * Patient must be \>= 18 years of age * Patient must have biopsy-proven metastatic squamous cell carcinoma, originating in the oral cavity, larynx, oropharynx, or hypopharynx, with active disease present in both the head and neck and distant sites * NOTE: The tumor from an oropharynx primary site must have known p16 status; p16 positive cancer of unknown primary is allowed as well, provided the disease presentation in consistent with a head and neck primary * Patient can have prior surgical resection of a primary cancer in the head and neck at any previous time, however, residual/recurrent disease in the head and neck must be present on baseline imaging * Any effects from prior cancer therapy for other diseases must be fully resolved and not pose a problem for giving the treatment on this trial * Patient must have 4 or fewer metastatic sites prior to starting any treatment, with thoracic nodal disease considered a single site if encompassable in a tolerable radiotherapy hypofractionated field (i.e.,15 fractions or less) * NOTE: Contiguous/adjacent metastases treatable in a single stereotactic field may be considered a single site * NOTE: Patients with additional indeterminate findings such that the total number of metastatic sites would be more than 4 may be enrolled if a non-malignant etiology to these findings is a reasonable consideration * Patient must have Eastern Cooperative Oncology Group (ECOG) performance status 0-1 * Patient must have the ability to understand and the willingness to sign a written informed consent document. Patients with impaired decision-making capacity (IDMC) who have a legally authorized representative (LAR) or caregiver and/or family member available will also be considered eligible * Patients must have measurable disease as follows: * For patients who have not started any initial systemic therapy (with pembrolizumab + chemotherapy) must have measurable disease documented by CT of the neck and chest, and abdomen obtained within 28 days prior to Step 1 registration * For patients who have started or completed their 3 cycles of initial systemic therapy (with pembrolizumab + chemotherapy) must have measurable disease documented by CT of the neck, chest and abdomen obtained within 28 days prior to the start of their initial systemic therapy * Leukocytes \>= 3,000/mcL (obtained =\< 28 days prior to Step 1 registration or prior to the start of any chemotherapy if on Arm T) * Absolute neutrophil count (ANC) \>= 1,500/mcL (obtained =\< 28 days prior to Step 1 registration or prior to the start of any chemotherapy if on Arm T) * Platelets \>= 100,000/mcL (obtained =\< 28 days prior to Step 1 registration or prior to the start of any chemotherapy if on Arm T) * Total bilirubin =\< institutional upper limit of normal (ULN). Patients with a total bilirubin \> 1.5 x ULN, that is attributed to confirmed Gilbert's syndrome, are allowed after consultation and approval from their treating physician (obtained =\< 28 days prior to Step 1 registration or prior to the start of any chemotherapy if on Arm T) * Aspartate aminotransferase (AST)(serum glutamic oxaloacetic transaminase \[SGOT\])/alanine aminotransferase (ALT)(serum glutamic pyruvic transaminase \[SGPT\]) =\< 3.0 x institutional ULN (obtained =\< 28 days prior to Step 1 registration or prior to the start of any chemotherapy if on Arm T) * Creatinine clearance: Glomerular filtration rate (GFR) \>= 50 mL/min/1.73m\^2 (for patients receiving carboplatin-based regimens, GFR \> 30 mL/min/1.73m\^2) (obtained =\< 28 days prior to Step 1 registration or prior to the start of any chemotherapy if on Arm T) * Human immunodeficiency virus (HIV)-infected patients on effective anti-retroviral therapy with undetectable viral load within 6 months of Step 1 registration are eligible for this trial * For patients with evidence of chronic hepatitis B virus (HBV) infection, the HBV viral load must be undetectable on suppressive therapy, if indicated * Patients with a history of hepatitis C virus (HCV) infection must have been treated and cured. For patients with HCV infection who are currently on treatment, they are eligible if they have an undetectable HCV viral load * Patients with a prior or concurrent malignancy whose natural history or treatment does not have the potential to interfere with the safety or efficacy assessment of the investigational regimen are eligible for this trial * Patients with known history or current symptoms of cardiac disease, or history of treatment with cardiotoxic agents, should have a clinical risk assessment of cardiac function using the New York Heart Association Functional Classification. To be eligible for this trial, patients should be class 2B or better * Patients on Arm S must have received chemoimmunotherapy * Patients will be enrolled in the quality of life (QOL) study if the patient can read and understand English, Spanish, French or Chinese (simplified or traditional characters) * NOTE: Sites cannot translate the associated QOL forms * Patients of childbearing potential and/or sexually active patients must not expect to conceive or father children by using an accepted and effective method(s) of contraception or by abstaining from sexual intercourse for the duration of their participation in the study. Patients of childbearing potential must continue contraceptive measures for 4 months after the last dose of protocol treatment and must not breastfeed while on study treatment through 4 months after the last dose of protocol treatment * STEP 2 RANDOMIZATION: * Patient must have ECOG performance status 0-2 * Patient must have completed 3 cycles of initial systemic chemotherapy * For patients registered to Arm S on Step 1, patients must have at least stable disease after completing 3 cycles of pembrolizumab + chemotherapy * Patient must have no signs of progression (complete response \[CR\]/partial response \[PR\] or stable disease \[SD\]) on restaging imaging (consisting of neck, chest, and abdomen CT). Restaging imaging must have been done after completion of initial systemic chemotherapy with pembrolizumab + chemotherapy on Step 1 and within 7 days prior to step 2 randomization. Patients with stable or responding radiologic response are eligible for Step 2

Exclusion Criteria:

* Patients must not have prior head and neck radiotherapy * Patient must not have an active autoimmune disease (i.e., inflammatory bowel disease, systemic lupus erythematosus, rheumatoid arthritis, etc.) that has required systemic treatment (i.e., disease modifying agents, corticosteroids, or immunosuppressive drugs) in past 2 years. Replacement therapy (i.e., thyroxine, insulin, physiologic corticosteroid replacement) is not considered a form of systemic treatment and is allowed * Patient must not be pregnant or breast-feeding due to the potential harm to an unborn fetus and possible risk for adverse events in nursing infants with the treatment regimens being used. All patients of childbearing potential must have a blood test or urine study within 14 days prior to Step 1 registration to rule out pregnancy. A patient of childbearing potential is defined as anyone, regardless of sexual orientation or whether they have undergone tubal ligation, who meets the following criteria: 1) has achieved menarche at some point, 2) has not undergone a hysterectomy or bilateral oophorectomy; or 3) has not been naturally postmenopausal (amenorrhea following cancer therapy does not rule out childbearing potential) for at least 24 consecutive months (i.e., has had menses at any time in the preceding 24 consecutive months) * Patient must not have received any live vaccine within 30 days prior to Step 1 registration and while participating in the study. Live vaccines include, but are not limited to, the following: measles, mumps, rubella, chicken pox, yellow fever, rabies, bacillus Calmette Guerin (BCG), and typhoid (oral) vaccine. Patients are permitted to receive inactivated vaccines and any non-live vaccines including those for the seasonal influenza and coronavirus disease 2019 (COVID-19) (Note: intranasal influenza vaccines, such as Flu-Mist trademark are live attenuated vaccines and are not allowed). If possible, it is recommended to separate study drug administration from vaccine administration by about a week (primarily, in order to minimize an overlap of adverse events

Conditions & Interventions

Interventions:

DRUG: Carboplatin, DRUG: Cisplatin, PROCEDURE: Computed Tomography, DRUG: Fluorouracil, PROCEDURE: Magnetic Resonance Imaging, DRUG: Paclitaxel, BIOLOGICAL: Pembrolizumab, PROCEDURE: Positron Emission Tomography, OTHER: Quality-of-Life Assessment, RADIATION: Radiation Therapy

Conditions:

Clinical Stage IV HPV-Mediated (p16-Positive) Oropharyngeal Carcinoma AJCC v8, Metastatic Head and Neck Squamous Cell Carcinoma, Metastatic Hypopharyngeal Squamous Cell Carcinoma, Metastatic Laryngeal Squamous Cell Carcinoma, Metastatic Oral Cavity Squamous Cell Carcinoma, Metastatic Oropharyngeal Squamous

Squamous Cell Carcinoma, Metastatic Laryngeal Squamous Cell Carcinoma, Metastatic Oral Cavity Squamous Cell Carcinoma, Metastatic Oropharyngeal Squamous Cell Carcinoma, Stage IV Cutaneous Squamous Cell Carcinoma of the Head and Neck AJCC v8, Stage IV Hypopharyngeal Carcinoma AJCC v8, Stage IV Laryngeal Cancer AJCC v8, Stage IV Lip and Oral Cavity Cancer AJCC v8, Stage IV Oropharyngeal (p16-Negative) Carcinoma AJCC v8

More Information

Contact(s): ctrrecruit@vcu.edu
Principal Investigator:
Phase: PHASE3
IRB
Number:
System ID: NCT05721755
