Lung cancer is the leading cause of cancer-related death in the US and around the world. Small cell lung cancer (SCLC) is distinguished from other forms of lung cancer by aggressive clinical progression and extensive metastases at diagnosis. 

- ESCC accounts for approximately 15% of lung cancer cases in the United States. Of these, 60-70% of patients will have extensive-stage disease (ES-SCLC) at diagnosis.

- Chemotherapy remains the cornerstone of treatment for ESCC.

- Chemotherapy-induced delayed neutropenia and prolonged neutropenia (HPS) in the bone marrow often results in multi-drug myelosuppression that may result in neutropenia, anemia, and thrombocytopenia.

- Tisel�� (NCT, Genentech, Inc.) is a transient intravenous kinase inhibitor that is administered as a single dose at the start of chemotherapy, helps to protect HPS-irradiated chemotherapy-induced damage (HPS), myelosuppression and mortality.

- Data from trials (G1T28, G1T28, NCT) in adults with ESCC showed that administering trilaciclib prior to chemotherapy reduced the incidence of chemotherapy-induced myelosuppression, and reduced the need for supportive care interventions and chemotherapy dose reductions.

A BUDGET IMPACT ASSESSMENT OF TRILACICLIB FOR DECREASING THE INCIDENCE OF CHEMOTHERAPY-INDUCED MYELOSUPPRESSION IN ADULT PATIENTS WITH EXTENSIVE-STAGE SMALL CELL LUNG CANCER

OBJECTIVE

- To estimate the budget impact of trilaciclib when prescribed to decrease the incidence of myelosuppression in adult patients with ESCC to a third party payer’s perspective.

METHODS

MODEL OVERVIEW

- The model was validated to assess the impact of trilaciclib from a third party payer’s perspective.

- The model simulates the outcomes and outcomes associated with standard ES-SCLC treatments when accompanied by chemotherapy.

- The model simulates the outcomes and outcomes associated with trilaciclib prescribed to decrease the incidence of chemotherapy-induced myelosuppression.

- The model simulates differences in outcomes and associated costs, as calculated for each scenario, to represent the estimated budget impact of trilaciclib (Figure 1).

# FIGURE 1: MODEL STRUCTURE

Population selection

- Number of SCLC diagnosed per year

- Number of SCLC treated per year

- Number of patients treated per year

- Number of chemotherapy cycles per patient

- Number of adverse events per patient

- Number of doses per cycle

- Drug acquisition cost per dose

- Drug acquisition cost per cycle

- Associated costs per cycle

- Total cost per chemotherapy regimen

- Total associated costs per chemotherapy regimen

RESULTS

- The model evaluates the budgetary impact of trilaciclib by considering the following factors:

  1. Neutropenia management costs
  2. Thrombocytopenia management costs
  3. Incidence of chemotherapy-related adverse events
  4. Cost of chemotherapy

- The model assumes that administering trilaciclib prior to chemotherapy will reduce the incidence of chemotherapy-induced myelosuppression, resulting in a reduction in associated costs and improved patient outcomes.

- The model predicts that administering trilaciclib will result in a significant reduction in chemotherapy-related adverse events and associated costs, leading to improved patient outcomes and reduced healthcare costs.

- The model demonstrates that administering trilaciclib prior to chemotherapy is a cost-effective strategy for decreasing the incidence of chemotherapy-induced myelosuppression in adult patients with ESCC.

Sensitivity and Analysis

- Deterministic sensitivity analysis suggests that the selected parameters for the budget impact of trilaciclib are robust to the selected parameters.

- The model is validated to assess the impact of trilaciclib from a third party payer’s perspective.

- The model simulates the outcomes and outcomes associated with standard ES-SCLC treatments when accompanied by chemotherapy.

- The model simulates the outcomes and outcomes associated with trilaciclib prescribed to decrease the incidence of chemotherapy-induced myelosuppression.

- The model simulates differences in outcomes and associated costs, as calculated for each scenario, to represent the estimated budget impact of trilaciclib (Figure 1).

# FIGURE 1: MODEL STRUCTURE

Population selection

- Number of SCLC diagnosed per year

- Number of SCLC treated per year

- Number of patients treated per year

- Number of chemotherapy cycles per patient

- Number of adverse events per patient

- Number of doses per cycle

- Drug acquisition cost per dose

- Drug acquisition cost per cycle

- Associated costs per cycle

- Total cost per chemotherapy regimen

- Total associated costs per chemotherapy regimen

RESULTS

- The model evaluates the budgetary impact of trilaciclib by considering the following factors:

  1. Neutropenia management costs
  2. Thrombocytopenia management costs
  3. Incidence of chemotherapy-related adverse events
  4. Cost of chemotherapy

- The model assumes that administering trilaciclib prior to chemotherapy will reduce the incidence of chemotherapy-induced myelosuppression, resulting in a reduction in associated costs and improved patient outcomes.

- The model predicts that administering trilaciclib will result in a significant reduction in chemotherapy-related adverse events and associated costs, leading to improved patient outcomes and reduced healthcare costs.

- The model demonstrates that administering trilaciclib prior to chemotherapy is a cost-effective strategy for decreasing the incidence of chemotherapy-induced myelosuppression in adult patients with ESCC.

Sensitivity and Analysis

- Deterministic sensitivity analysis suggests that the selected parameters for the budget impact of trilaciclib are robust to the selected parameters.

- The model is validated to assess the impact of trilaciclib from a third party payer’s perspective.

- The model simulates the outcomes and outcomes associated with standard ES-SCLC treatments when accompanied by chemotherapy.

- The model simulates the outcomes and outcomes associated with trilaciclib prescribed to decrease the incidence of chemotherapy-induced myelosuppression.

- The model simulates differences in outcomes and associated costs, as calculated for each scenario, to represent the estimated budget impact of trilaciclib (Figure 1).

# FIGURE 1: MODEL STRUCTURE

Population selection

- Number of SCLC diagnosed per year

- Number of SCLC treated per year

- Number of patients treated per year

- Number of chemotherapy cycles per patient

- Number of adverse events per patient

- Number of doses per cycle

- Drug acquisition cost per dose

- Drug acquisition cost per cycle

- Associated costs per cycle

- Total cost per chemotherapy regimen

- Total associated costs per chemotherapy regimen

RESULTS

- The model evaluates the budgetary impact of trilaciclib by considering the following factors:

  1. Neutropenia management costs
  2. Thrombocytopenia management costs
  3. Incidence of chemotherapy-related adverse events
  4. Cost of chemotherapy

- The model assumes that administering trilaciclib prior to chemotherapy will reduce the incidence of chemotherapy-induced myelosuppression, resulting in a reduction in associated costs and improved patient outcomes.

- The model predicts that administering trilaciclib will result in a significant reduction in chemotherapy-related adverse events and associated costs, leading to improved patient outcomes and reduced healthcare costs.

- The model demonstrates that administering trilaciclib prior to chemotherapy is a cost-effective strategy for decreasing the incidence of chemotherapy-induced myelosuppression in adult patients with ESCC.

Sensitivity and Analysis

- Deterministic sensitivity analysis suggests that the selected parameters for the budget impact of trilaciclib are robust to the selected parameters.

- The model is validated to assess the impact of trilaciclib from a third party payer’s perspective.

- The model simulates the outcomes and outcomes associated with standard ES-SCLC treatments when accompanied by chemotherapy.

- The model simulates the outcomes and outcomes associated with trilaciclib prescribed to decrease the incidence of chemotherapy-induced myelosuppression.

- The model simulates differences in outcomes and associated costs, as calculated for each scenario, to represent the estimated budget impact of trilaciclib (Figure 1).

# FIGURE 1: MODEL STRUCTURE

Population selection

- Number of SCLC diagnosed per year

- Number of SCLC treated per year

- Number of patients treated per year

- Number of chemotherapy cycles per patient

- Number of adverse events per patient

- Number of doses per cycle

- Drug acquisition cost per dose

- Drug acquisition cost per cycle

- Associated costs per cycle

- Total cost per chemotherapy regimen

- Total associated costs per chemotherapy regimen

RESULTS

- The model evaluates the budgetary impact of trilaciclib by considering the following factors:

  1. Neutropenia management costs
  2. Thrombocytopenia management costs
  3. Incidence of chemotherapy-related adverse events
  4. Cost of chemotherapy

- The model assumes that administering trilaciclib prior to chemotherapy will reduce the incidence of chemotherapy-induced myelosuppression, resulting in a reduction in associated costs and improved patient outcomes.

- The model predicts that administering trilaciclib will result in a significant reduction in chemotherapy-related adverse events and associated costs, leading to improved patient outcomes and reduced healthcare costs.

- The model demonstrates that administering trilaciclib prior to chemotherapy is a cost-effective strategy for decreasing the incidence of chemotherapy-induced myelosuppression in adult patients with ESCC.

Sensitivity and Analysis

- Deterministic sensitivity analysis suggests that the selected parameters for the budget impact of trilaciclib are robust to the selected parameters.

- The model is validated to assess the impact of trilaciclib from a third party payer’s perspective.

- The model simulates the outcomes and outcomes associated with standard ES-SCLC treatments when accompanied by chemotherapy.

- The model simulates the outcomes and outcomes associated with trilaciclib prescribed to decrease the incidence of chemotherapy-induced myelosuppression.

- The model simulates differences in outcomes and associated costs, as calculated for each scenario, to represent the estimated budget impact of trilaciclib (Figure 1).

# FIGURE 1: MODEL STRUCTURE

Population selection

- Number of SCLC diagnosed per year

- Number of SCLC treated per year

- Number of patients treated per year

- Number of chemotherapy cycles per patient

- Number of adverse events per patient

- Number of doses per cycle

- Drug acquisition cost per dose

- Drug acquisition cost per cycle

- Associated costs per cycle

- Total cost per chemotherapy regimen

- Total associated costs per chemotherapy regimen

RESULTS

- The model evaluates the budgetary impact of trilaciclib by considering the following factors:

  1. Neutropenia management costs
  2. Thrombocytopenia management costs
  3. Incidence of chemotherapy-related adverse events
  4. Cost of chemotherapy

- The model assumes that administering trilaciclib prior to chemotherapy will reduce the incidence of chemotherapy-induced myelosuppression, resulting in a reduction in associated costs and improved patient outcomes.

- The model predicts that administering trilaciclib will result in a significant reduction in chemotherapy-related adverse events and associated costs, leading to improved patient outcomes and reduced healthcare costs.

- The model demonstrates that administering trilaciclib prior to chemotherapy is a cost-effective strategy for decreasing the incidence of chemotherapy-induced myelosuppression in adult patients with ESCC.