Kinase Inhibitors (KI) in the Treatment of Medullary Thyroid Cancer
Cometriq (cabozantinib), Caprelsa (vandetanib), Lenvima (lenvatinib)

FDA-Approved Indications

- Cometriq is indicated for the treatment of patients with progressive, metastatic medullary thyroid cancer.
- Caprelsa is indicated for treatment of symptomatic or progressive medullary thyroid cancer in patients with unresectable locally advanced or metastatic disease.
- Lenvima is indicated for treatment of locally recurrent or metastatic, progressive, radioactive iodine refractory differentiated thyroid cancer.

Mechanism of Action

Cabozantinib is an oral, multi-tyrosine kinase inhibitor that works by blocking abnormal tyrosine kinase proteins, such as MET, VEGFR-1,-2,-3, RET, KIT, TRKB, FLT-3, AXL, and TIE-2. These receptor kinases are involved in both normal cellular function and pathologic processes such as oncogenesis, metastasis, tumor angiogenesis, and maintenance of the tumor microenvironment.

Vandetanib is a kinase inhibitor that has been shown to inhibit epidermal growth factor receptor (EGFR)-dependent cell survival in vitro. It inhibits epidermal growth factor (EGF)-stimulated receptor tyrosine kinase phosphorylation in tumor cells and endothelial cells, and vascular endothelial cell growth factor (VEGF)-stimulated tyrosine kinase phosphorylation in endothelial cells. In models of angiogenesis, it has been shown to inhibit endothelial cell migration, proliferation, survival, and new blood vessel formation.

Lenvatinib is a receptor tyrosine kinase (RTK) inhibitor that inhibits activities of vascular endothelial growth factor (VEGF) receptors VEGFR1 (FLT1), VEGFR2 (KDR) and VEGFR3 (FLT4).
Approval Criteria

When a benefit, cabozantinib, vandetanib or lenvatinib may be approved when one of the following criteria are met:

1. Cabozantinib is being used for the treatment of patients with progressive, metastatic medullary thyroid cancer (ICD-10 C73).
2. Vandetanib is being used for the treatment of symptomatic or progressive medullary thyroid cancer (ICD-10 C73) in patients with unresectable locally advanced or metastatic disease
3. Lenvatinib is being used for the treatment of locally recurrent or metastatic, progressive, radioactive iodine refractory differentiated thyroid cancer (ICD-10 C73).

The use of cabozantinib, vandetanib or lenvatinib for disease states not FDA-approved indications will be denied based on the lack of clinical data to support its effectiveness and safety in other conditions.

When approved, Caprelsa must be obtained through Biologics, Inc, a limited distribution pharmacy.

When approved, Cometriq must be obtained through Diplomat Specialty Pharmacy, a limited distribution pharmacy.

When approved, Lenvima must be obtained through our specialty pharmacy.