Trastuzumab:

Class:

- Antineoplastic Agent, Anti-HER2; Antineoplastic Agent, Monoclonal Antibody; Monoclonal Antibody

Indications:

- Treatment (adjuvant) of HER2 overexpressing breast cancer as part of a combination regimen with doxorubicin, cyclophosphamide, and either paclitaxel or docetaxel; in combination with docetaxel and carboplatin; as a single agent following anthracycline-based combination treatment;
- treatment of HER2 overexpressing metastatic breast cancer in combination with paclitaxel as first-line treatment or as a single agent in patients who have received prior chemotherapy regimens for treatment of metastatic disease;
- treatment of HER2 overexpressing metastatic gastric or gastroesophageal junction adenocarcinoma in combination with cisplatin and either capecitabine or fluorouracil in patients who have not received prior treatment for metastatic disease

Unlabeled use :

- Treatment of HER2-positive metastatic breast cancer (in combination with pertuzumab and docetaxel) in patients who have not received prior anti-HER2 therapy or chemotherapy to treat metastatic disease;
- treatment of HER2 overexpressing metastatic breast cancer (in combination with lapatinib) which had progressed on prior trastuzumab containing therapy

Available dosage form in the hospital:

150 mg / vial
440 mg / vial

Trade Names:

Herceptin

Dosage: Note: Do **NOT** substitute conventional trastuzumab for or with ado-trastuzumab emtansine; products are different and are **NOT** interchangeable. Details concerning dosing in combination regimens should also be consulted.

-Breast cancer, adjuvant treatment, HER2+: I.V. infusion:

****With concurrent paclitaxel or docetaxel:*

- Initial loading dose: 4 mg/kg infused over 90 minutes, followed by
- Maintenance dose: 2 mg/kg infused over 30 minutes weekly for total of 12 weeks, followed 1 week later (when concurrent chemotherapy completed) by 6 mg/kg infused over 30-90 minutes every 3 weeks for total therapy duration of 52 weeks

****With concurrent docetaxel/carboplatin:*

- Initial loading dose: 4 mg/kg infused over 90 minutes, followed by
- Maintenance dose: 2 mg/kg infused over 30 minutes weekly for total of 18 weeks, followed 1 week later (when concurrent chemotherapy completed) by 6 mg/kg infused over 30-90 minutes every 3 weeks for total therapy duration of 52 weeks

****Following completion of anthracycline-based chemotherapy:*

- Initial loading dose: 8 mg/kg infused over 90 minutes, followed by
- Maintenance dose: 6 mg/kg infused over 30-90 minutes every 3 weeks for total therapy duration of 52 weeks

-Breast cancer, metastatic, HER2+ (either as a single agent or in combination with paclitaxel): I.V. infusion:

- Initial loading dose: 4 mg/kg infused over 90 minutes, followed by
- Maintenance dose: 2 mg/kg infused over 30 minutes weekly until disease progression

-Gastric cancer, metastatic, HER2+ (in combination with cisplatin and either capecitabine or fluorouracil for 6 cycles followed by trastuzumab monotherapy; Bang, 2010; Van Cutsem, 2009): I.V. infusion:

- Initial loading dose: 8 mg/kg infused over 90 minutes, followed by
- Maintenance dose: 6 mg/kg infused over 30-90 minutes every 3 weeks until disease progression

-Missed doses *(Canadian labeling, 2012):* If a dose is missed by ≤1 week, the usual maintenance dose (based on patient's schedule) should be administered as soon as possible (do not wait until the next planned cycle); if a dose is missed by >1 week, then a loading dose (4 mg/kg if patient receives trastuzumab weekly; 8 mg/kg if on an every-3-week schedule) should be administered, followed by the usual maintenance dose and schedule.

-Breast cancer, metastatic, HER2+ (unlabeled combinations):

- Trastuzumab, pertuzumab, and docetaxel (in patients with no prior anti-HER2 therapy or chemotherapy to treat metastatic disease): Initial: 8 mg/kg followed by a maintenance dose of 6 mg/kg every 3 weeks until disease progression or unacceptable toxicity (Baselga, 2012)
- Trastuzumab and lapatinib (in patients with progression on prior trastuzumab containing therapy): Initial: 4 mg/kg followed by a maintenance dose of 2 mg/kg every week (Blackwell, 2010; Blackwell, 2012).

Geriatric
Refer to adult dosing.

Renal Impairment:
No dosage adjustment provided in manufacturer's labeling, although data suggest that the disposition of trastuzumab is not altered based on serum creatinine (up to 2 mg/dL)

Hepatic Impairment:
No dosage adjustment provided in manufacturer's labeling.

Dosing: Adjustment for Toxicity
1.Cardiotoxicity: LVEF ≥16% decrease from baseline or LVEF below normal limits and ≥10% decrease from baseline: Withhold treatment for at least 4 weeks and repeat LVEF every 4 weeks. May resume trastuzumab treatment if LVEF returns to normal limits within 4-8 weeks and remains at ≤15% decrease from baseline value. Discontinue permanently for persistent (>8 weeks) LVEF decline or for >3 incidents of treatment interruptions for cardiomyopathy.
2.Infusion-related events:

- Mild-moderate infusion reactions: Decrease infusion rate.
- Dyspnea, clinically significant hypotension: Interrupt infusion.
- Severe or life-threatening infusion reactions: Discontinue.

Common side effect:

- Cardiovascular: LVEF decreased (4% to 22%)
- Central nervous system: Pain (47%), fever (6% to 36%), chills (5% to 32%), headache (10% to 26%), insomnia (14%), dizziness (4% to 13%)
- Dermatologic: Rash (4% to 18%)
- Gastrointestinal: Nausea (6% to 33%), diarrhea (7% to 25%), vomiting (4% to 23%), abdominal pain (2% to 22%), anorexia (14%)
- Neuromuscular & skeletal: Weakness (4% to 42%), back pain (5% to 22%)
- Respiratory: Cough (5% to 26%), dyspnea (3% to 22%), rhinitis (2% to 14%), pharyngitis (12%)
- Miscellaneous: Infusion reaction (21% to 40%, chills and fever most common; severe: 1%), infection (20%)

Pregnancy Risk Factor: **D**