capecitabine (kap-pe-si-ta-ben)
Xeloda

**Classification**
Therapeutic: antineoplastics
Pharmacologic: antimetabolites

**Pregnancy Category D**

**Indications**
Malignant colorectal cancer. Adjuvant treatment for Dukes' C colon cancer following primary resection. Metastatic breast cancer that has worsened despite prior therapy with anthracyclines (daunorubicin, doxorubicin, idarubicin) (to be used in combination with docetaxel). Metastatic breast cancer that is resistant to both paclitaxel and an anthracycline (daunorubicin, doxorubicin, idarubicin) or in patients previously treated and further anthracycline therapy is contraindicated.

**Action**
Converted in tissue to 5-fluorouracil (5-FU), which inhibits DNA and RNA synthesis by preventing thymidine production. The enzyme responsible for the final step in the conversion to 5-FU may be found in higher concentrations in some tumors. Therapeutic Effects: Death of rapidly replicating cells, particularly malignant ones.

**Pharmacokinetics**
Absorption: Well absorbed after oral administration.
Distribution: Unknown.
Metabolism and Excretion: Metabolized mostly in tissue and by the liver to 5-FU; 5-FU is metabolized by dihydropyrimidine dehydrogenase to a less toxic compound; inactive metabolites are excreted primarily in urine.
Half-life: 45 min.

**TIME/ACTION PROFILE (blood levels)**
<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>unknown</td>
<td>1.5 hr (2 hr for 5-FU)</td>
<td>unknown</td>
</tr>
</tbody>
</table>

†Onset of antineoplastic effect is 6 wk
‡Peak 5-FU levels occur at 2 hr

**Contraindications/Precautions**
Contraindicated in: Hypersensitivity to capecitabine or 5-FU; Dihydropyrimidine dehydrogenase deficiency; OB: Potential for fetal harm or death (frequent monitoring of PT/INR recommended).

Use Cautionally in: Mild-moderate renal impairment (start dose at 75% in patients with CCr 30–50 mL/min); Severe renal dysfunction; Geriatric patients (>80 yr).

**Adverse Reactions/Side Effects**
CNS: fatigue, headache, dizziness, insomnia.
EENT: eye irritation, epistaxis, rhinorrhea.
CV: edema, chest pain.
GI: DIARRHEA, NECROTIZING ENTEROCOLITIS, abdominal pain, anorexia, constipation, dysgeusia, hyperbilirubinemia, nausea, stomatitis, vomiting, dyspepsia, xerostomia.
Derm: dermatitis, hand-and-foot syndrome, nail disorder, alopecia, erythema, rashes.
F and E: dehydration.
Hemat: anemia, leukopenia, thrombocytopenia.
MS: arthralgia, myalgia.
Neuro: peripheral neuropathy.
Resp: cough, dyspnea.
Misc: fever.

**Interactions**
Drug-Drug: May ↑ risk of bleeding with warfarin (frequent monitoring of PT/INR recommended). Toxicity ↑ by concurrent leucovorin. Toxicity ↑ by concurrent leucovorin absorption. May ↑ blood levels and risk of toxicity from phenytoin (may need to ↓ phenytoin dose).

Drug-Food: Food ↓ absorption, although capecitabine should be given within 30 min after meal.

**Route/Dosage**
PO (Adults): 1250 mg/m² twice daily for 14 days, followed by 7-day rest period; given in 3-wk cycles.

Renal Impairment
PO (Adults CCr 30-50 mL/min): ↓ initial dose to 75% of usual.

**NURSING IMPLICATIONS**

Assessment
- Assess mucous membranes, number and consistency of stools, and frequency of vomiting. Assess for signs of infection (fever, chills, sore throat, cough, diarrhea, pain in lower back or side, difficulty or pain in urination). Use standard precautions, barrier precautions, handwashing, and universal precautions as indicated.

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ses for bleeding (bleeding gums, bruising, petechiae, and guaiac test stools, urine, and emesis). Avoid IV injections and taking rectal temperatures. Apply pressure to venipuncture sites for 10 min. Anemia may occur. Monitor for increased fatigue, diarrhea, and orthostatic hypotension.

Nursing care professional if symptoms of toxicity (stomatitis, uncontrollable vomiting, diarrhea, fever) occur; drug may need to be discontinued or dose decreased. Patients with severe diarrhea should be monitored carefully and given fluid and electrolyte replacements if they become dehydrated.

- Assess patient for hand and foot syndrome. Symptoms include numbness, paresthesia or pain, tingling, painless or painful swelling, erythema, desquamation, blistering, and sore pain.

- Lab Test Considerations: Monitor hepatic (serum alkaline phosphatase, AST, ALT, and bilirubin), renal, and hematologic (hemoglobin, hematology, leukocyte, platelet count) function before and periodically during therapy. May cause leukopenia, anemia, and thrombocytopenia. Leukopenia may require discontinuation of therapy. Therapy should be interrupted if serum bilirubin exceeds 1.5 times normal or greater, may be monitored after bilirubin returns to normal.

- Lab Test Considerations: Monitor PT or INR frequently in patients receiving warfarin and capecitabine to adjust warfarin dose. May cause bleeding within a few days of initiation of therapy to 1 mo following discontinuation of therapy. Risk is greater in patients over 60 yr.

Potential Nursing Diagnoses
Risk for infection (Side Effects)
Imbalanced nutrition: less than body requirements (Side Effects)

Implementation

- High Alert: Fatalities have occurred with chemotherapy agents. Before administration, clarify all ambiguous orders; double-check single, daily, and course of therapy dose limits; have second practitioner independently double-check original order and dose calculations. Do not confuse capecitabine (Xeloda) with orlistat (Xenical).

- Dose modifications are based on degree of toxicity encountered. Once a dose has been reduced because of toxicity, it should not be increased at a later time. See manufacturer’s recommendations.

- PO: Administer every 12 hr for 2 wk, followed by a 1-wk rest period. Tablets should be taken with water within 30 min after a meal.

Patient/Family Teaching

- instruct patient to notify health care provider immediately if any of the following occur: diarrhea (5 or more bowel movements in a day or any diarrhea at night), vomiting (more than once in 24 hr), nausea (loss of appetite and significant decrease in daily food intake), stomatitis (pain, swelling, or sore in mouth), hand-and-foot syndrome (pain, swelling, or redness of hands and/or feet), fever or infection (temperature of 100.5 °F or other signs of infection).

- instruct patient to notify health care provider immediately if he or she is taking folic acid.

- Instruct patient to notify health care professional if fever, chills, sore throat, signs of infection, yellowing of skin or eyes, abdominal pain, nausea, vomiting, diarrhea, blood in stool or urine, rash, breathlessness, bleeding gums, bruising, or blood in urine occurs. Caution patient to avoid crowds and persons with known infections. Limit patient in sun or wind. Do not drink alcohol.

- Advise patient to rinse mouth with clear water after eating and drinking and to avoid using flossing to minimize stomatitis. Viscous lidocaine may be used if mouth pain interferes with eating. Stomatitis pain may require treatment with opioid analgesics.

- Review with both female and male patients the need for contraception during therapy. Advise female patient to notify health care professional immediately if pregnancy is suspected or if breast feeding.

- Emphasize the importance of routine follow-up lab tests to monitor progress and to check for side effects.

Evaluation/Desired Outcomes

- Tumor regression.

Why was this drug prescribed for your patient?