**estrogens, conjugated (equine)**
(ess-troe-jenz con (puh-gae-lered))

**Contraindications/Precautions**
Contraindicated in: History of anaphylaxis or angioedema to estrogen; Thromboembolic disease (e.g., DVT, PE, MI, stroke); Unexplained vaginal bleeding; History of breast cancer; History of estrogen-dependent cancer; Hepatic impairment; Protein C, protein S, or antithrombin deficiency or other thrombophilic disorders; OB: May result in harm to the fetus; Lactation: Negatively affects quantity and quality of breast milk.

Use Cautiously in: Long-term use (more than 4–5 yr); may q risk of myocardial infarction, stroke, invasive breast cancer, pulmonary emboli, deep vein thrombosis and dementia in postmenopausal women; underlying cardiovascular disease; Hypertriglyceridemia; May q risk of endometrial carcinoma; History of hereditary angioedema.

**Adverse Reactions/Side Effects**
(Systemic use)

**Actions**
Estrogens promote the growth and development of female sex organs and the maintenance of secondary sex characteristics in women. Therapeutic Effects: Restoration of hormonal balance in various deficiency states and treatment of hormone-sensitive tumors.

**Pharmacokinetics**
Absorption: Well absorbed after oral administration. Readily absorbed through skin and mucous membranes.
Distribution: Widely distributed. Crosses placenta and enters breast milk.
Metabolism and Excretion: Mostly metabolized by liver and other tissues.
Half-life: Unknown.

**TIME/ACTION PROFILE (estrogenic effects†)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>rapid</td>
<td>unknown</td>
<td>24 hr</td>
</tr>
<tr>
<td>IM</td>
<td>delayed</td>
<td>unknown</td>
<td>6–12 hr</td>
</tr>
<tr>
<td>IV</td>
<td>rapid</td>
<td>unknown</td>
<td>6–12 hr</td>
</tr>
</tbody>
</table>

†Tumor response may take several weeks.

**Interactions**
Drug-Drug: May alter requirement for warfarin, oral hypoglycemic agents, or insulins. Barbiturates, carbamazepine, or rifampin may q effectiveness.
Smoking may q risk of adverse CV reactions. Erythromycin, clarithromycin, itraconazole, ketoconazole, and ritonavir may q risk of adverse effects.

Drug-Food: Grapefruit juice may q risk of adverse effects.
Route/Dosage

Estrogens should be used in the lowest doses for the shortest period of time consistent with desired therapeutic outcome.

Ovariectomy, Primary Ovarian Failure

PO (Adults): 1.25 mg daily administered cyclically (3 wk on, 1 wk off).

Osteoporosis/Menopausal Symptoms

PO (Adults): 0.3–1.25 mg daily or in a cycle.

Female Hypogonadism

PO (Adults): 0.3–0.625 mg daily administered cyclically (3 wk on, 1 wk off).

Inoperable Breast Carcinoma—Men and Postmenopausal Women

PO (Adults): 10 mg 5 times daily.

Inoperable Prostate Carcinoma

PO (Adults): 1.25–2.5 mg 3 times daily.

Uterine Bleeding

IM, IV (Adults): 25 mg, may repeat in 6–12 hr if necessary.

Atrophic Vaginitis

PO (Adults): 0.3–1.25 mg daily.

Vag (Adults): 0.5–2 g cream (0.3125 mg–1.25 g conjugated estrogens) daily for 3 wk, off 1 wk, then repeat.

Moderate to Severe Dyspareunia

Vag (Adults): 0.5 g cream (0.3125 mg conjugated estrogens) twice weekly continuously or daily for 3 wk, off 1 wk, then repeat.

NURSING IMPLICATIONS

Assessment

● Assess BP before and periodically during therapy.

● Assess frequency and severity of vasomotor symptoms.

● Monitor intake and output ratios and weekly weight. Report significant discrepancies or steady weight gain.

● May cause ↑ HDL and triglycerides, and ↓ serum LDL and total cholesterol concentrations.

● May cause ↑ serum glucose, sodium, cortisol, prolactin, prothrombin, and factor VII, VIII, IX, and X levels. May ↓ serum bilirubin, sodium, and antithrombin III, and some progesterone concentrations.

● Monitor hepatic function before and periodically during therapy.

● May cause false interpretation of thyroid function tests.

● May cause hypocalcemia in patients with metastatic bone lesions.

Potential Nursing Diagnoses

Sexual dysfunction (Indications)

Implementation

● Do not confuse Enjuvia with Jansonia.

● Estrogens should be used in the lowest doses for the shortest period of time consistent with desired therapeutic outcome.

● PO: Administer with or immediately after food to reduce nausea.

● Vag: Manufacturer provides applicator with cream. Dose is marked on the applicator. Wash applicator with mild soap and warm water after each use.

● IM: To reconstitute, withdraw at least 5 mL of air from dry container and then slowly introduce the sterile diluent (bacteriostatic water for injection) against the container wall. Gently agitate container to dissolve, do not shake vigorously. Solution is stable for 60 days if refrigerated. Do not use if precipitate is present or if solution is darkened.

● IV is preferred parenteral route because of rapid response.

IV Administration

● Direct IV:

Diluent: Reconstitute as for IM. Inject into distal port tubing of free-flowing IV (0.9% NaCl, D5W, or lactated Ringer’s solution). Concentration: 5 mg/mL.

Rate: Administer slowly (no faster than 5 mg/min) to prevent flushing.

Y-Site Compatibility: heparin, hydrocortisone sodium succinate, potassium chloride, vitamin B complex with C.

Patient/Family Teaching

● Instruct patient to take oral medication as directed. Advise patient to avoid drinking grapefruit juice during therapy. Take missed doses as soon as remembered, but not just before next dose. Do not double doses.

© 2015 F.A. Davis Company  CONTINUED
Explain dose schedule and maintenance routines. Discontinuing medication suddenly may cause withdrawal bleeding. Bleeding is anticipated during the week when conjugated estrogens are withheld.

If nausea becomes a problem, advise patient that eating solid foods often provides relief. Patients report that estrogens should not be used to decrease risk of cardiovascular disease. Estrogens may increase risk of cardiovascular disease and breast cancer.

Advise patients to report signs and symptoms of fluid retention (swelling of ankles and legs, weight gain), thromboembolic disorders (pain, swelling, tenderness in extremities; headache; chest pain; blurred vision), depression, headache, dizziness (sudden falls or dizziness), premenstrual dysphoria (swollen skin or eyes), pruritus, dark urine, light-colored stools, or abnormal vaginal bleeding to health care professional.

Caution patient that cigarette smoking during estrogen therapy may increase risk of serious side effects, especially for women over age 35.

Inform patient that Premarin tablet may appear in stool; this is not harmful.

Caution patient to use sunscreen and protective clothing to prevent increased pigmentation.

Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and to consult with health care professional before taking other medications.

Advise patient to notify health care professional if pregnancy is suspected.

Emphasize the importance of routine follow-up physical exams, including BP; breast, abdomen, and pelvic examinations; Papanicolaou smears every 6–12 mo; and mammogram every 12 mo or as directed. Health care professional will evaluate possibility of discontinuing medication every 3–6 mo. If on continuous (not cyclical) therapy or without concurrent progestins, endometrial biopsy may be recommended if necessary.

Vag: Instruct patient in the correct use of applicator. Patient should remain recumbent for at least 30 min after administration. Missed or late applicator use may require repeating applicator use. If a dose is missed, do not use the missed dose, but return to regular dosing schedule.

Evaluation/Desired Outcomes

■ Resolution of menopausal symptoms.
■ Decreased vaginal and vulvar itching, inflammation, or dryness associated with menopause.
■ Normalization of estradiol levels in patients with ovaries intact or hypogonadism.
■ Control of the spread of advanced metastatic breast or prostate cancer.
■ Prevention of osteoporosis.
■ Relief of moderate to severe dyspareunia due to menopause.

Why was this drug prescribed for your patient?