**dantrolene** (dan-troe-len) Dantrium

**Classification**
Therapeutic: Skeletal muscle relaxants (direct acting)

**Pregnancy Category C**

**Indications**
- **PO:** Treatment of spasticity associated with: Spinal cord injury, Stroke, Cerebral palsy, Multiple sclerosis. Prophylaxis of malignant hyperthermia.
- **IV** Emergency treatment of malignant hyperthermia.
- **Unlabeled Use:** Management of neuroleptic malignant syndrome.

**Action**

**Pharmacokinetics**
- **Absorption:** 35% absorbed after oral administration.
- **Distribution:** Unknown.
- **Metabolism and Excretion:** Almost entirely metabolized by the liver.
- **Half-life:** 8.7 hr.

**TIME/ACTION PROFILE (effects on spasticity)**

<table>
<thead>
<tr>
<th>Route</th>
<th>Onset</th>
<th>Peak</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>1 wk</td>
<td>unknown</td>
<td>6–12 hr</td>
</tr>
<tr>
<td>IV</td>
<td>rapid</td>
<td>rapid</td>
<td>unknown</td>
</tr>
</tbody>
</table>

**Contraindications/Precautions**
- **Contraindicated in:** No contraindications to IV form in treatment of hyperthermia; Lactation; Situations in which spasticity is used to maintain posture or balance.
- **Use Cautiously in:** Cardiac, pulmonary, or previous liver disease; Women and patients >35 yr (risk of hepatotoxicity); OB: Use lowest possible dose (may have risk of hepatotoxicity); DD: Use only if benefit outweighs potential risk to fetus.

**Adverse Reactions/Side Effects**


**Interactions**

**Drug-Drug:** Additive CNS depression with CNS depressants, including alcohol, antihistamines, opioid analgesics, sedative/hypnotics, and parenteral magnesium sulfate. Risk of hepatotoxicity with other hepatotoxic agents or estrogen. Risk of arrhythmias with verapamil. Neuromuscular blocking effects of vecuronium.

**Drug-Natural Products:** Concomitant use of kava-kava, valerian, chamomile, or hops can cause CNS depression.

**Route/Dosage**

<table>
<thead>
<tr>
<th>Route</th>
<th>Indication</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>Spasticity</td>
<td>25 mg once daily for 7 days, then 25 mg 2 times daily for 7 days, then 50 mg 3 times daily for 7 days, then 100 mg 3 times daily; may up to 100 mg 4 times daily, if needed. Prevention of malignant hyperthermia—4–8 mg/kg/day in 3–4 divided doses for 1–2 days before procedure, last dose 3–4 hr preop. Peak hyperthermic crisis follow-up—4–8 mg/kg/day in 3–4 divided doses for 1–3 days after IV treatment.</td>
</tr>
<tr>
<td>PO</td>
<td>Prevention of malignant hyperthermia—4–8 mg/kg/day in 3–4 divided doses for 1–3 days after IV treatment.</td>
<td></td>
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<tr>
<td>IV</td>
<td>Treatment of malignant hyperthermia—at least 1 mg/kg (up to 3 mg/kg), continued hemodynamic depression during or a cumulative dose of 10 mg/kg has been given. If symptoms reappear, dose can be repeated. Prevention of malignant hyperthermia—2.5 mg/kg before anesthesia.</td>
<td></td>
</tr>
</tbody>
</table>

**Dantrolene—Discontinued**
NURSING IMPLICATIONS

Assessment
● Assess bowel function periodically. Persistent diarrhea may warrant discontinua-
tion of therapy.
● Muscle Spasticity: Assess neuromuscular status and muscle spasticity before ini-
tiating and periodically during therapy to determine response.
● Malignant Hyperthermia: Assess prior anesthesia history of all surgical pa-
tients. Also assess for family history of reactions to anesthesia (malignant hyper-
thermia or perioperative death).
● Monitor ECG, vital signs, electrolytes, and urine output continuously when admin-
istering IV for malignant hyperthermia.
● Monitor patient for difficulty swallowing and choking during meals on the day of
administration.
● Lab Test Considerations: Monitor liver function frequently during ther-
apy. Liver function abnormalities (AST, ALT, alkaline phosphatase, bil-
brin, GGTP) may require discontinuation of therapy.
● Evaluate renal function and CBC before and periodically during therapy in patients
receiving prolonged therapy.

Potential Nursing Diagnoses
Impaired physical mobility (Indications)
Acute pain (Indications)
Risk for injury (Side Effects)

Implementation
● PO: If gastric irritation becomes a problem, may be administered with food. Oral
suspensions may be made by opening capsules and adding them to fruit juices or
other liquid. Drink immediately after mixing.
● Oral dose for spasticity should be divided into 4 doses/day.
● Oral dose is not indicated for neuroleptic malignant syndrome.

IV Administration
● pH: No Data.
● Direct IV: Reconstitute each 20 mg with 60 mL of sterile water for injection (without a bacteriostatic agent). Shake until solution is clear. Solution
must be used within 6 hr. Administer without further dilution. Protect diluted so-
lution from direct light. Concentration: 0.333 mg/mL. Rate: Administer each
single dose by rapid continuous IV push through Y-tubing or 3-way stopcock. Fol-
low immediately with subsequent doses as indicated. Medication is very irritating
to tissues; observe infusion site frequently to avoid extravasation.
● Intermittent Infusion: Prophylactic dose has been administered as an infusion.
Rate: Administer over 1 hr before anesthesia.
● Y-Site Compatibility: acyclovir, paclitaxel, palonosetron.
● Y-Site Incompatibility: alemtuzumab, alfentanil, amikacin, amphotericin B, am-
photericin B colloidal, amphotericin B lipid complex, amphotericin B lipid con-
jugate, amsacrine, anidulafungin, argatroban, arsenic trioxide, ascorbic acid, atro-
pium, aztreonam, bevacizumab, bleomycin, bromodeoxyuridine, busulfan, bus-
ulfan, butorphanol, calcitriol, camptothecin, cana

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dantrolene

Patient/Family Teaching

- Advise patient not to take more medication than the amount prescribed, to minimize risk of hepatotoxicity and other side effects. If a dose is missed, do not take unless remembered within 1 hr. Do not double doses.

- May cause dizziness, drowsiness, visual disturbances, and muscle weakness. Advise patient to avoid driving and other activities requiring alertness until response to drug is known. After IV dose for surgery, patient may experience decreased grip strength, leg weakness, tight head sensation, and difficulty swallowing for up to 48 hr. Caution patients to avoid activities requiring alertness and to use caution when walking down stairs and eating during this period.

- Advise patient to avoid taking alcohol or other CNS depressants concurrently with this medication.

- Instruct patient to notify health care professional if rash, itching, yellow eyes or skin, dark urine; or slate-colored, bloody, or black, tarry stools occur or if nausea, weakness, malaise, fatigue, or diarrhea persists. May require discontinuation of therapy.

- Advise patient to wear sunscreen and protective clothing to prevent photosensitivity reactions.

- Emphasize the importance of follow-up exams to check progress in long-term therapy and blood tests to monitor for side effects.

Malignant Hyperthermia: Patients with malignant hyperthermia should carry identification describing disease process at all times.

Evaluation/Desired Outcomes

- Relief of muscle spasm in musculoskeletal conditions. One week or more may be required to see improvement; if there is no observed improvement in 45 days, the medication is usually discontinued.

- Prevention of or decrease in temperature and skeletal rigidity in malignant hyperthermia.

Why was this drug prescribed for your patient?

Canadian drug name.

Genetic Implication. CAPI TALS indicate life-threatening, underline indicate most frequent. Strikethrough indicate discontinued.

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