PROTOTYPE DRUG  |  Colchicine  |  Uric Acid Inhibitor

**ACTIONS AND USES**

Colchicine is a natural product obtained from the autumn crocus, which is grown in gardens and found in meadows throughout the United States and Canada. The drug reduces inflammation associated with acute gouty arthritis by inhibiting the synthesis of microtubules, subcellular structures responsible for helping white blood cells infiltrate an area. Although colchicine has no analgesic properties, clients experience pain relief owing to the reduction in inflammation. It may be taken to prevent or treat acute gout, often in combination with other uric acid-inhibiting agents.

**ADVERSE EFFECTS**

Side effects such as nausea, vomiting, diarrhea, and GI upset are more likely to occur at the beginning of therapy. The drug may cause bone marrow toxicity, and aplastic anemia, leucopenia, thrombocytopenia, or agranulocytosis may occur. Colchicine may also directly interfere with the absorption of vitamin B₁₂.

**Contraindications:** This drug is contraindicated in clients with a known hypersensitivity to colchicine, and in those with serious GI, renal, hepatic, or cardiac impairment. Clients with blood dyscrasias should not receive colchicine.

**INTERACTIONS**

**Drug–Drug:** Concurrent use with NSAIDs may increase the risk of GI symptoms. Colchicine may exhibit additive bone marrow toxicity with cyclosporine, phenylbutazone, and other drugs that adversely affect bone marrow. Erythromycin may increase serum colchicine levels. Loop diuretics may decrease colchicine effects. Alcohol or products that contain alcohol may cause skin rashes and result in additive liver damage. Colchicine may increase sensitivity to CNS depressants.

**Lab Tests:** May interfere with urinary steroid determinations; may give false positive values for urinary erythrocytes and Hgb.

**Herbal/Food:** Unknown.

**Treatment of Overdose:** Overdoses (including accidental ingestion of autumn crocus) may cause severe GI distress, shock, paralysis, delirium, respiratory failure, and death.

**ADMINISTRATION ALERTS**

- Take on an empty stomach, when symptoms first appear.
- Pregnancy category C. Parenteral doses must not be given to pregnant women.

**PHARMACOKINETICS**

| Onset: Unknown |
| Peak: 0.5–2 h |
| Half-life: 20 min |
| Duration: Unknown |

**NURSING PROCESS FOCUS**  Clients Receiving Colchicine

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| Prior to administration:  
  - Obtain a complete health history including allergies, drug history, and possible drug interactions.  
  - Obtain baseline vital signs.  
  - Obtain lab work to include complete blood count (CBC), platelets, uric acid levels, renal and liver function tests, and urinalysis. |  
  - Activity Intolerance, related to joint pain  
  - Body Image, Disturbed, related to joint swelling  
  - Knowledge, Deficient, related to effects and side effects of drug therapy |

**Planning: Client Goals and Expected Outcomes**

The client will:  
- Report a decrease in pain and an increase in function in affected joints.  
- Demonstrate an understanding of the drug's action by accurately describing drug side effects and precautions.  
- Immediately report side effects and adverse reactions.

**Implementation**

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  - Monitor lab results throughout therapy and perform a Coombs' test for hemolytic anemia. (Agranulocytosis, aplastic anemia, and thrombocytopenia may occur.)  
  - Monitor for signs of toxicity. (This will evaluate therapeutic drug regimen and prevent complications.)  
  - Monitor for signs of renal impairment such as oliguria. Record intake and output. (Monitoring allows prevention of renal complications.) |  
  - Teach client importance of routine lab studies, so that deviations from normal can be corrected immediately.  
  - Instruct client to report weakness, abdominal pain, nausea, and/or diarrhea.  
  - Instruct client to report a decrease in urine output and to increase fluid intake to 3–4 L/day. |

(Continued)
Adequate levels of calcium in the body are necessary to properly transmit nerve impulses, prevent muscle spasms, and provide stability and movement. Adequate levels of vitamin D, parathyroid hormone, and calcitonin are also necessary for these functions.

Hypocalcemia is a serious condition that requires immediate therapy with calcium supplements, often concurrently with vitamin D.

Pharmacotherapy of osteomalacia includes calcium and vitamin D supplements.

Pharmacotherapy of osteoporosis includes bisphosphonates, estrogen modulator drugs, and calcitonin.

Pharmacotherapy of clients with Paget’s disease includes bisphosphonates and calcitonin.

For osteoarthritis, the main drug therapy is pain medication that includes aspirin, acetaminophen, NSAIDs, COX-2 inhibitors, or stronger analgesics. Drug therapy for rheumatoid arthritis includes analgesics, anti-inflammatory drugs, glucocorticoids, and disease-modifying antirheumatic drugs.

Gout is characterized by a buildup of uric acid in either the blood or the joint cavities. Drug therapy includes agents that inhibit uric acid buildup or enhance its excretion.