NEXTSTEPS IN DERM | GW School of Medicine & Health Sciences

Pentoxifylline Therapeutic Cheat Sheet

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TRADE NAME[1]

- Trental
- Pentoxil
- Pentopak

MECHANISM OF ACTION

- Increases the deformability of erythrocytes by increasing their ATP and cyclic nucleotide levels, thereby decreasing blood viscosity.[1,5,7]
- Inhibits membrane-bound phosphodiesterase increasing intracellular cAMP, resulting in:[1,3,7,8]
  - Vasodilation.
  - Prevention of platelet aggregation and adhesion.
  - Decreased thromboxane synthesis.
  - Increased prostacyclin synthesis.
- Exerts anti-inflammatory effects by activation of protein kinase A resulting in:[1,3,7,8]
  - Inhibition of cytokines TNF-α, IL-1, and IL-6.
  - Suppression of B cells, T cells, and neutrophils.
  - Decreased expression of endothelial adhesion molecules.
- Inhibits effects on fibroblast biosynthesis, decreasing collagen, fibronectin, and glycosaminoglycan production. [4,5,7]

FDA-APPROVED FOR[5,6]

- Intermittent claudication

OFF-LABEL DERMATOLOGIC USES[1-4,7,8]

- Vasculitis
- Vasculopathies
- Lipodermatosclerosis
- Venous ulcers
- Granuloma annulare
- Pretibial myxedema
- Sarcoidosis
- Raynauds Phenomenom
- Chilblains (Pernio)
- Pigmented purpuric dermatosis
- Lichen sclerosis et atrophicus
- Vitiligo
- Pemphigus Vulgaris
- Alopecia areata
- Psoriasis
- Necrobiosis lipoidica
- Actinic prurigo
- Irritant and allergic hypersensitivity reactions
- Graft versus host disease
- Leishmaniasis
- Apthous ulcers and Behçet's disease
- Leprosy
- Stevens-Johnson syndrome and toxic epidermal necrolysis
- Radiation induced fibrosis and burns
- Keloids, scars, and morphea

DOSING (ORAL)[5-6]

- Initial dose of 400 mg three times daily.
- Reduce to 400 mg twice daily for CrCl 30-60 mL/min, or if experiencing any adverse effects.
- Reduce to 400 mg once daily for CrCl <30 mL/min or if on hemodialysis or peritoneal dialysis.
- Maximal therapeutic benefit may take 2-4 weeks of use.

DOSING (INTRALESIONAL)[4]

- Doses of 1 mg/mL weekly for five weeks.

SIDE EFFECTS[5,6]

- GI: Abdominal discomfort, bloating, indigestion, and diarrhea.
- Cardiovascular: Chest pain, arrhythmias, hypertension, dyspnea, tachycardia, and hypotension.
- Central nervous system: Dizziness, headache.
- Cutaneous: Flushing.

DRUG INTERACTIONS[5]

- Pentoxifylline may enhance the effect of antiplatelet agents (P2Y12 inhibitors, NSAIDs, SSRIs, etc.)
- Pentoxifylline may enhance the hypotensive effect of antihypertensives
- Cimetidine may increase the serum concentration of pentoxifylline.
- CYP1A2 inhibitors may increase the serum concentration of pentoxifylline.
- Pentoxifylline may enhance the anticoagulant effect of heparins.
- Pentoxifylline may enhance the anticoagulant effect of warfarin and other vitamin K antagonists.
- Ketorolac may enhance adverse or toxic effects of pentoxifylline.
- Pentoxifylline may increase the serum concentration of theophylline derivatives.

CONTRAINDICATIONS[5-6]

- Previous intolerance to pentoxifylline, xanthines (caffeine, theophylline).
- Recent cerebral and or retinal hemorrhage.
- Canadian labeling only: Acute MI, severe coronary artery disease when myocardial stimulation might prove harmful, current or recent peptic ulcers.

PREGNANCY AND BREASTFEEDING[1]

- Fetotoxic and teratogenic in rat and rabbit models at 49 times the maximum human dose.
- Patients of reproductive potential: recommend effective contraception during treatment.
- Avoid breastfeeding during treatment + at least 14 hours after last dose
- Report any pregnancies within these parameters to Pfizer, Inc. at 1-877-390-2940.

PREGNANCY AND BREASTFEEDING[5,6]

- Adverse events have been observed in animal reproductive studies.
- Pentoxifylline and its metabolites are present in breast milk.
- There are no adequate and well controlled studies in pregnant women.

MONITORING[5]

- Renal function, hemoglobin/hematocrit (especially in high risk patients).

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