Melarsoprol

Class:
Melarsoprol is a trivalent arsenical made by coupling melarsen oxide to 2, 3-dimercaptopropinol, also known as British anti-Lewisite.

Antiparasitic Activity:
Melarsoprol is the mainstay of therapy in late-stage cases of *Trypanosoma brucei gambiense* and *Trypanosoma brucei rhodesiense* sleeping sickness.

Mechanisms of Action:
Melarsoprol can interact with thiol groups of several different proteins but interactions between melarsoprol and the parasite specific glutathione-spermidine conjugate trypanothione might be of more physiological relevance.

Mechanisms of Resistance:
Wild-type trypanosomes have two adenosine transporters, P1 and P2, but only P2 transports melanophenyl arsenicals. Resistant parasites lack the P2 transporter.

Pharmacokinetics:
Melarsoprol is transformed into active metabolites; initially melarsen oxide is the active drug. Melarsen oxide has a half-life of 3.8 hours. Melarsoprol is excreted mostly through the GI tract, but active metabolites are found in the urine.

Dosage:
Gambian trypanosomiasis: 2.2 mg/kg daily for 10 days. See text for alternative requirements.
Rhodesian trypanosomiasis: after 2 or 3 doses of suramin as pre-treatment, a reasonable strategy would be: 0.36 mg/kg on day 1, 0.72 (day 2), 1.1 (day 3), 1.4 (day 10), 1.8 (days 11, 12), 2.2 (day 19), 2.9 (day 20) and 3.6 mg/kg (up to 180 mg) on days 21, 28, 29 and 30.

Adverse Effects:
Reactive encephalopathy
Polyneuropathy

Pregnancy:
No information.

Drug Interactions:
No information.

Brand names/Manufacturer:
Arsobal®