FUROXONE

Generic Name: furazolidone Brand Name: Furoxone

Last reviewed on RxList: 12/8/2004

DESCRIPTION

Furoxone (furazolidone) is one of the synthetic antimicrobial nitrofurans. It is a stable, yellow, crystalline compound 3-(5-nitrofurfurylideneamino)-2-oxazolidinone .

Inactive Ingredients: Furoxone (furazolidone) tablets contain calcium pyrophosphate, FD& C Blue #2, magnesium stearate, starch, and sucrose. Furoxone (furazolidone) liquid contains carboxy methylcellulose sodium, flavors, glycerin, magnesium aluminum silicate, methylparaben, propylparaben, purified water, and saccharin sodium.

INDICATIONS

Indicated in the specific and symptomatic treatment of bacterial or protozoal diarrhea and enteritis caused by susceptible organisms. Furoxone (furazolidone) products are well tolerated, have a very low incidence of adverse reactions.

DOSAGE AND ADMINISTRATION

FUROX-ONE TABLETS, 100 mg each, are green and scored to facilitate adjustment of dosage.

Average Adult Dosage: One 100-mg tablet four times daily.

Average Dosage for Children: Those 5 years of age or older should receive 25 to 50 mg (¼ to ½ tablet) four times daily. The tablet dosage may be crushed and given in a spoonful of corn syrup.

FUROXONE (furazolidone) LIQUID composition: each 15 ml tablespoonful contains Furoxone (furazolidone) 50 mg per 15 ml (3. 33 mg per ml) in a light-yellow aqueous vehicle. Suitable flavoring, suspending and preservative agents complete the formulation. (See Inactive Ingredients.) It is stable in storage. Prior to administering Furoxone (furazolidone) Liquid shake the bottle vigorously. It should be dispensed in amber bottles.

Average Adult Dosage: Two tablespoonfuls four times daily.

Average Dosage for Children:

5 years or older † ½ to 1 tablespoonful four times daily (7.515. 0 ml)

1 to 4 years old † 1 to 1½ teaspoonfuls four times daily (5.07.5 ml)

1 month to 1 year † ½ to 1 teaspoonful four times daily (2. 5- 5.0 ml)

This dosage is based on an average dose of 5 mg of Furoxone (furazolidone) per Kg (2.3 mg per lb) of body weight given in four equally divided doses during 24 hours. The maximal dose of 8.8 mg of Furoxone (furazolidone) per Kg (4 mg per lb) of body weight per 24 hours should probably not be exceeded because of the possibility of producing nausea or emesis. If these are severe, the dosage should be reduced.

The average case of diarrhea treated with Furoxone (furazolidone) will respond within 2 to 5 days of therapy. Occasional patients may require a longer term of therapy. If satisfactory clinical response is not obtained within 7 days it indicates that the pathogen is refractory to Furoxone (furazolidone) and the drug should be discontinued. Adjunctive therapy with other antibacterial agents or bismuth salts is not contraindicated. (N. B. Refer to WARNINGS.) In order to administer furazolidone in doses larger than recommended or in excess of five days the indications must be weighed against the possible hazards of hypertensive crisis related to the accumulation of monoamine oxidase inhibition. If indications are sufficient, the patient should be informed of drugs and foods which predispose to hypertensive crises. (See PRECAUTIONS.)

HOW SUPPLIED

Furoxone (furazolidone) Tablets, 100 mg each, coded "Roberts 130", are supplied in amber bottles containing 20 and 100 tablets. (Should be dispensed in amber bottles.)

Furoxone (furazolidone) Liquid is supplied in amber bottles containing 60 ml and 473 ml. (Should be dispensed in amber bottles.)

SIDE EFFECTS

A few hypersensitivity reactions to Furoxone (furazolidone) have been reported including a fall in blood pressure, urticaria, fever, arthralgia, and a vesicular morbilliform rash. These reactions subsided following withdrawal of the drug. Nausea, emesis, headache, or malaise occur occasionally and may be minimized or eliminated by reduction in dosage or withdrawal of the drug.

Rarely, individuals receiving Furoxone (furazolidone) have exhibited an Antabuse® (disulfiram)-like reaction to alcohol characterized by flushing, slight temperature elevation, dyspnea, and in some instances, a sense of constriction within the chest. All symptomatology disappeared within 24 hours with no lasting ill effects. During nine years of clinical use and approximately 3.5 million courses of therapy (in the U. S. A. alone) in the published literature and documented case

reports 43 cases have been reported † of which 14 were produced under experimental conditions with planned doses of the compound in excess of those recommended.

Three of these experienced a fall in blood pressure necessitating active therapy. Indications are that levarterenol (Levophed®) may be used to combat such hypotensive episodes since human studies show that this drug is not potentiated in patients treated with Furoxone (furazolidone) . (Indirectly acting pressor agents should be avoided.) The ingestion of alcohol in any form should be avoided during Furoxone (furazolidone) therapy and for four days thereafter to prevent this reaction.

Furoxone (furazolidone) may cause mild reversible intravascular hemolysis in certain ethnic groups of Mediterranean and Near-Eastern origin, and Negroes. This is due to an intrinsic defect of red blood cell metabolism in a small percentage of these ethnic groups, making them unusually susceptible to hemolysis by numerous compounds. It is necessary to observe such patients closely while receiving Furoxone (furazolidone) and to discontinue its use it there is any indication of hemolysis. Should not be administered to infants under 1 month of age because of the possibility of producing a hemolytic anemia due to immature enzyme systems (glutathione instability) in the early neonatal period.

Colitis, proctitis, anal pruritus, staphylococcic enteritis, renal or hepatic toxicity have not been a significant problem with Furoxone (furazolidone) .

DRUG INTERACTIONS

WARNINGS

(See CONTRAINDICATIONS.)

Use in Pregnancy: The safety of Furoxone (furazolidone) during the childbearing age has not been established; as with any potent antibacterial, Furoxone (furazolidone) must be administered with caution during the childbearing age. However, animal breeding studies have revealed no evidence of teratogenicity following the administration of Furoxone (furazolidone) for long periods of time and at doses far in excess of those recommended for the human. There have been no clinical reports regarding this possible adverse effect on the fetus or the newborn infant.

PRECAUTIONS

Monoamine Oxidase Inhibition

Effective inhibition of monoamine oxidase by furazolidone has been demonstrated experimentally in man by the enhancement of tyramine and amphetamine sensitivity and by the directly measured monoamine oxidase inhibition.

A period of five days of furazolidone administration in the recommended doses in these patients was required to give an enhancement of the tyramine and amphetamine sensitivities by two to threefold. Administration of furazolidone in the recommended dose of 400 mg/day for a period of five days should not subject the adult patient to an undue hazard of hypertensive crisis due to monoamine oxidase inhibition. Hypertensive crises have never been reported even after the peroral administration of larger doses and/or for longer periods of time. Controlled studies reveal no signs or symptoms of hypertensive crisis even after the peroral administration of Furoxone (furazolidone) in doses of 400 mg/day in excess of 48 consecutive months.

If administered in doses larger than recommended or in excess of five days, the indications must be weighed against the possible hazards of hypertensive crisis related to the accumulation of monoamine oxidase inhibition. If indications are sufficient, the patients should be informed of drugs and foods which predispose to hypertensive crises:

(A) Other known M.O. drugs; however, when indicated they should be prescribed with caution and at a reduced dosage.

(B) Tyramine-containing foods such as broad beans, yeast extracts, strong unpasteurized cheeses, beer, wine, pickled herring, chicken livers, and fermented products are contraindicated.

(C) Indirectly-acting sympathomimetic amines such as those found in nasal decongestants (phenylephrine, ephedrine) and anorectics (amphetamines) are contraindicated.

(D) Likewise, sedatives, antihistamines, tranquilizers, and narcotics should be used in reduced dosages and with caution.

Orthostatic hypotension and hypoglycemia may occur.

Carcinogenesis, Mutagenesis, Impairment of Fertility

Furazolidone has shown evidence of tumorigenic activity in several studies involving chronic, high- dose oral administration to rodents. Promotion of the development of mammary neoplasia has been demonstrated in rats of two strains. Prominent among the findings in mice was that furazolidone caused significant increases in malignant lung tumors. The relevance of these animal findings, particularly in relationship to short-term therapy in humans, is not established.

OVERDOSE

No information provided.

CONTRAINDICATIONS

1. To obviate an Antabus® (disulfiram)- like reaction which may occur in some patients, the ingestion of alcohol should be avoided during or within four days after Furoxone (furazolidone) therapy (see ADVERSE REACTIONS).

2. IN GENERAL, M.O. DRUGS, TYRAMINE- CONTAINING FOODS AND INDIRECTLY-ACTING SYMPATHOMIMETIC AMINES ARE CONTRAINDICATED OR SHOULD BE USED WITH CAUTION IN PATIENTS RECEIVING FUROXONE (SEE PRECAUTIONS).

3. INFANTS UNDER 1 MONTH SHOULD NOT RECEIVE FUROXONE (SEE- ADVERSE REACTIONS AND DOSAGE FOR CHILDREN). THE FUROXONE (furazolidone) CONCENTRATION IN THE BREAST MILK OF LACTATING WOMEN HAS NOT BEEN DETERMINED, THEREFORE THE SAFETY IN THIS CIRCUMSTANCE HAS NOT BEEN ESTABLISHED.

4. Prior sensitivity to Furoxone (furazolidone) is a contraindication.

CLINICAL PHARMACOLOGY

ACTION:

Furoxone (furazolidone) has a broad antibacterial spectrum covering the majority of gastrointestinal tract pathogens including E. coli, staphylococci, Salmonella, Shigella, Proteus, Aerobacter aerogenes, Vibrio cholerae and Giardia lamblia. Its bactericidal activity is based upon its interference with several bacterial enzyme systems; this antimicrobial action minimizes the development of resistant organisms. It neither significantly alters the normal bowel flora nor results- in fungal overgrowth. The brown color found in the urine with adequate dosage is of no clinical significance.