

CLINDAMYCIN

Use

Clindamycin is used in the prophylaxis and treatment of anaerobic infections, and to protect against bacterial endocarditis and intrapartum group B streptococcal infection in subjects allergic to penicillin.

Pharmacology

Clindamycin hydrochloride is an antibiotic related to lincomycin that has a mainly bacteriostatic effect on Gram-positive aerobes and a wide range of anaerobic bacteria. It acts by inhibiting protein synthesis in much the same way as erythromycin. It was originally isolated from the soil fungus *Streptomyces lincolnensis*, and first synthesised in 1967. It is rapidly absorbed when given by mouth, and penetrates most tissues well, although CSF penetration is poor. The drug is metabolised by the liver with an adult half life of 2–3 hours. The dose given does not normally need to be changed when there is renal failure because only a little is excreted unmetabolised in the urine. The half life is long, and troublesomely variable (3–15) hours in the preterm baby, falling to adult values by two months, and the manufacturers do not recommend IV use in babies less than four weeks old. The risk of diarrhoea, and of occasionally fatal antibiotic-related pseudomembranous colitis (characterised by bloody diarrhoea and abdominal pain), has limited the neonatal use of this antibiotic. Treatment must be stopped at once if this adverse reaction is suspected. Oral vancomycin (15 mg/kg every 8 hours) and parenteral nutrition are often used to treat this colitis which seems to be due to *Clostridium difficile* toxin. Other adverse effects include skin rashes and other hypersensitivity reactions, blood dyscrasias, and disturbances of hepatic function. The drug is still sometimes used to treat staphylococcal osteomyelitis, and to control the anaerobic sepsis associated with necrotising enterocolitis (although the only controlled trial raised the possibility that clindamycin might increase the risk of late stricture formation). Clindamycin is occasionally used in the management of protozoal infection (including malaria and toxoplasmosis). It is now increasingly used to treat overt bacterial vaginosis, and some also advocate screening for asymptomatic vaginosis in early pregnancy if vaginal pH exceeds 4.5. There is no evidence of teratogenicity, and treatment during lactation only exposes the baby to about 3% of the maternal dose on a weight for weight basis. There is just one anecdotal report of a baby who passed two bloody stools while being breast fed by such a mother.

Prophylaxis

Bacterial vaginosis: Clindamycin (300 mg twice daily by mouth for 5 days, or 5 grams of the 2% vaginal cream once a day for 7 days) reduced the risk of very preterm birth in two recent trials when given to women with a clearly abnormal vaginal flora or frank bacterial vaginosis in early pregnancy (≤ 16 weeks).

Maternal group B streptococcal carriage: Clindamycin (900 mg IV once every 8 hours) can be used, like penicillin (q.v.) or erythromycin, to reduce the risk of the baby becoming infected during delivery.

In children with heart defects: Short courses of clindamycin are used prophylactically during dental and ENT procedures to prevent endocarditis in children and adults with heart defects who are allergic to penicillin, or who have received more than a single dose of penicillin in the past 4 weeks. Give 20 mg/kg of clindamycin by mouth one hour before the procedure is due. Azithromycin (q.v.) is a useful oral alternative.

Treatment

Neonates: Give 5 mg/kg by mouth or (slowly) IV once every 8 hours to manage severe staphylococcal infection, or the anaerobic septicaemia sometimes associated with neonatal necrotising enterocolitis. Very immature babies may be at risk from the benzyl alcohol, which is an excipient of the IV product. Babies more than 2 weeks old with normal liver function may benefit from one dose every 6 hours.

Older children: Give infants with severe infection over 2 months old 10 mg/kg IV once every 6 hours.

Supply

300 mg (2 ml) ampoules of clindamycin phosphate (containing 0.9% w/v benzyl alcohol) cost £6.20. To obtain a solution containing 5 mg/ml for accurate administration first dilute the contents of the 300 mg ampoule to 15 ml with 5% dextrose, and then take 0.25 ml (5 mg) of this solution for each kilogram that the baby weighs, dilute this with 0.75 ml/kg of 5% dextrose, and infuse over at least 10 minutes. Clindamycin palmitate could also be made available as an oral suspension. This is stable for 2 weeks at room temperature after reconstitution. A 40 gram pack of the 2% vaginal cream costs £11.80.

References

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