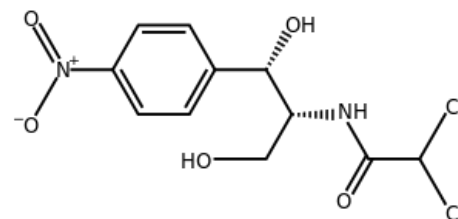


Chloramphenicol

Chloramphenicol is a broad-spectrum bacteriostatic antibiotic, it has a bactericidal effect in high doses. It is an effective but relatively **dangerous ATB. It is never used as a drug of first choice!** In the 1970s, its use was severely limited because of its negative side effect, namely the possibility of inducing **aplastic anemia**.



The formula of Chloramphenicol

Mechanism

It inhibits proteosynthesis , binds to the **50S** subunit of the ribosome.

Spectrum of effect

Most aerobic G + and G– bacteria, G + and G– anaerobes are sensitive, including *Bacteroides fragilis* , *Rickettsia* , *Chlamydia* , mycoplasmas, *Neisseria meningitidis* and Salmonella.

Pharmacokinetics

It is very **well absorbed**, which is used in life-threatening conditions. It is applied mainly **parenterally**, with the possibility of oral administration. It has a small volume of distribution. It penetrates well into tissues, thanks to the small size of the molecule it also penetrates into the cerebrospinal fluid. It is metabolised by the liver and excreted by the kidneys. It affects the levels of many drugs (eg warfarin or phenytoin).

Indications

- Typhoid fever
- Invasive haemophilus infection (serotype b) resistant to ampicillin
- Severe anaerobic infections
- Meningococcal or pneumococcal CNS infections
- Anaerobic or mixed CNS infections (abscess)

Contraindication

⚠ The absolute contraindication is the administration of chloramphenicol to immature infants due to reduced liver and kidney function (development of the so-called *gray baby syndrome*).

Side effects

- Nausea and vomiting .
- Bone marrow disorders - after a dose higher than 50 mg / kg and used for more than 1-2 weeks, there are regular disorders of erythrocyte maturation (vacuolated nucleated blood cells in the bone marrow), anemia and reticulocytopenia , which are reversible .
- Aplastic anemia - probably in people with genetically determined predisposition, in 50% irreversible . The onset does not depend on the dose or time of administration.

Gray baby syndrome

Gray baby syndrome (gray according to skin color) (*Gray syndrome*, *Gray syndrome*) occurs in newborns (especially premature infants) after administration of chloramphenicol. The cause is an underdeveloped detoxifying glucuronidase system. The syndrome is characterized by hypotension, hypoperfusion of organs, develops into collapse and shock. Administration should be very careful with reduced doses if unavoidable.

Links

related articles

- Antibiotics
- Antibiotic therapy in neonatal age
- Antibiotic for the treatment of staphylococcal infection

External links

- Chloramphenicol (Czech wikipedia)
- Chloramphenicol (English wikipedia)

Source

- BENEŠ, Jiří. *Study materials* [online]. [feeling. 2009]. < <http://jirben.wz.cz> >.

Použitá literatura

- LINCOVÁ, Dagmar and Hassan FARGHALI, et al. *Basic and applied pharmacology*. 2nd edition. Prague: Galén, 2007. pp. 481. ISBN 978-80-7262-373-0 .
- HAVLIK, Jiri, et al. *Infectious diseases*. 2nd edition. Prague: Avicenum, 1990. 393 pp. ISBN 80-201-0062-8 .
- LOBOVSKÁ, Alena. *Infectious diseases*. 1st edition. Prague: Karolinum, 2001. 263 pp. ISBN 80-246-0116-8 .
- MARTÍNKOVÁ, Jiřina, Stanislav MIČUDA and Jolana CERMANOVÁ, et al. *Selected chapters from clinical pharmacology for bachelor study* [online]. © 2005. [feeling. 2010-08-14]. < <https://www.lfhk.cuni.cz/farmakol/predn/prednbak.htm/> >.

Antibiotics and chemotherapeutics				
bactericidal	aminoglycosides	amikacin • gentamicin • isepamycin • neomycin • netilmicin • spectinomycin • streptomycin • tobramycin		
	antituberculotics	isoniazid • cycloserine • ethambutol • ethionamide • capreomycin • pyrazinamide • viomycin		
	beta-lactam	cephalosporins	1st generation cephalosporins	cefazolin • cefadroxil • cefalexin • cephalothin • cefapirin
			cephalosporins II. generation	cefuroxime • cefamandole • cefpodoxime proxetil • cefprozil monohydrate • cefuroxime axetil
			cephalosporins III. generation	cefotaxime • cefetamet pivoxil • cefixime • cefoperazone • cefsulodin • ceftazidime • ceftibuten • ceftriaxone • co-cefoperazone
			cephalosporins IV. generation	cefepime • cefpire
			V. generation cephalosporins	ceftaroline
		carbapenems	imipenem • doripenem • ertapenem • meropenem	
		monobactams	aztreonam	
		penicillins	narrow-spectrum penicillins	basic penicillins (penicillin G, penicillin V) • antistaphylococcal penicillins (cloxacillin • dicloxacillin • oxacillin • flucloxacillin)
			broad-spectrum penicillins	aminopenicillins (amoxicillin, ampicillin) • carboxypenicillins (ticarcillin) • acylureidopenicillins (piperacillin)
			beta-lactamase inhibitors	clavulanic acid (co-amoxicillin, co-ticarcillin) • sulbactam (co-ampicillin) • tazobactam (co-piperacillin)
	glycopeptides	teicoplanin • vancomycin		

	quinolones	1st generation quinolones	nalidixic acid • oxolinic acid	
		2nd generation quinolones	ciprofloxacin • norfloxacin • pipemidic acid • rosoxacin	
		3rd generation quinolones	sparfloxacin • enoxacin • fleroxacin • lomefloxacin • ofloxacin • pefloxacin	
		4th generation quinolones	moxifloxacin	
	lipopetides	daptomycin		
	nitroimidazoles	metronidazole • ornidazole		
	nitrofurans	furazolidone • nifuratel • nifuroxazide • nitrofurantoin		
	polypeptide ATB	bacitracin • colistin • gramicidin • polymyxin B		
rifamycins	rifampicin • rifabutin • rifaximin • rifamycin			
bacteriostatic	amphenicol	azidamphenicol • chloramphenicol • florfenicol • thiamphenicol		
	glycylcyclines	tigecycline		
	lincosamides	clindamycin • lincomycin		
	macrolides	1st generation macrolides	erythromycin • josamycin • oleandomycin • spiramycin	
		2nd generation macrolides	azithromycin • clarithromycin • roxithromycin	
	oxazolidinones	linezolid		
	pyrimidines	co-trimoxazole • pyrimethamine • trimethoprim		
	streptogramins	streptogramin A and B		
	sulfonamides	sulfamethoxazole • sulfasalazine • sulfathiazole • sulfisoxazole		
	sulfones	dapson		
	tetracyclines	doxycycline		

