Drugs in Pigeons

A Gestier*

The use of various drugs in the racing pigeon is widespread. Most pigeons are medicated with illicit drugs on illogical regimes. The racing pigeon fraternity, like the racing dig and horse industry, seem to have access to a plethora of medications. Most of these are given for suspected diseases of unknown significance by completely medically ignorant owners. The effects of the drugs given on the racing performance of the birds is impossible to define.

When using drugs at correct dosages for the correct disease it is still difficult to assess the effect of the drug on the bird. For the commonly prescribed drugs used by veterinarians, no literature is available that discusses the effects of the drug on racing performance. It would appear that if a disease is present and the correct drug administered then performance will improve! Most of the pigeons racing in Australia suffer from a group of very common diseases that will certainly reduce performance. Ornithosis, trichomoniasis, salmonellosis, coccidiosis and parasitism comprise the core of diseases seen in our birds.

Antibiotics in the racing pigeon

There is a poor understanding of the principles of antibiotic use by the pigeon fancier. The chronic subtherapeutic doses of antibiotics used in pigeons may be the reason for the high incidence of L-forms of bacteria in the pigeon. L-forms of bacteria are resistant to antibiotics inhibiting cell wall formation.

Aminoglycosides are not absorbed from the gut and thus are of no use in treating systemic infections. The majority of *Escherichia coli* and *Streptococcus* sp isolated from the trachea of racing pigeons are resistant to oxytetracycline and chlortetracycline.

Chloramphenicol is no longer effective against *Salmonella* serovars - trimethoprim and enrofloxacin are the most effective against *Salmonella*. Doxycycline is the most effective for ornithosis - oral or injectable forms are available.

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Dosage Guidelines (After Zwijnenberg *et al* (1992)

Aminoglycosides	Neomycin Streptomycin	50-100 mg/kg 100 mg/kg	SID SID	Oral Oral
Spectinomycin	Spectinomycin	30 mg/kg	SID	Oral
Lincosamides	Lincomycin-spectinomycin	50 mg/kg	SID	Oral
Macrolides	Erythromycin Tylosin	25 mg/kg 50 mg/kg 25 mg/kg 50 mg/kg	SID SID SID SID	IM Oral IM Oral
Nitrofurans	Furazolidone	15-20 mg/kg	SID	Oral
Broad spectrum penicillins	Ampicillin Amoxycillin	120 mg/kg 75-100 mg/kg	BID BID	Oral Oral
Quinolones	Flumequine Enrofloxacin	30 mg/kg 10 mg/kg 20 mg/kg	SID SID SID	IM/SC IM/SC Oral
Tetracyclines	Oxytetracyclines Doxycycline	100-200 mg/kg 30 mg/kg 50 mg/kg 25 mg/kg 7.5 mg/kg	TID-QID (with grit) TID-QID (no grit) SID BID (with grit) BID (no grit)	Oral Oral IM/SC Oral Oral
Trimethoprim/sulphonamides	Trimethoprim Trimethoprim/sulfamethoxasole	20 mg/kg 10-50 mg/kg	SID SID	Oral Oral

Several drug combinations are advocated by pigeon fanciers, in medicine only two combinations are considered appropriate for the use of combinations of antimicrobials.

1. In case of infections in which multiple strains of bacteria are likely or proved to be present (e.g., upper respiratory tract infections); and
2. in case of synergism.

In general, the combinations of antibiotics may give rise to the following three situations:

1. bactericidal + bactericidal: may be synergistic or simply additive
2. bacteriostatic + bacteriostatic: usually simply additive
3. bacteriostatic + bactericidal: frequently antagonistic.

Anthelmintics

Guidelines for dosages of anthelmintics in the racing pigeon (after Zwijnenberg *et al* (1992)

Tubulin binding agents	Cambendazole Mebendazole Oxibendazole Netobimin	60 mg/kg 2 days 60 mg/kg 7 days 8 mg/kg 7 days 10 mg/kg once 20 mg/kg 7 days	Oral Oral Oral Oral Oral	Nematodes Nematodes Ascarids Nematodes Nematodes
Ganglionic stimulating drugs	Levamisole Tetramisole	40 mg/kg repeat in 10 days 40 mg/kg repeat in 10 days	Oral Oral	Nematodes Nematodes
GABA-release interfering drugs: Avermectins	Ivermectin	0.2 mg/kg repeat in 10 days	IM/SC/oral	nematodes
Phosphorylation uncouplers	Niclosamide	75 mg/kg 3 days	oral	cestodes
Others	Haloxon Piperazine Praziquantel	50 mg/kg repeat 14 days 300-600 mg/kg 2 days 10 mg/kg once	oral oral oral	capillaria ascarids cestodes

Mebendazole is not advised as it causes feather deformities and reduced hatchability.
Haloxon is an organophosphate and is potentially dangerous to birds.

Coccidiostats

(After Zwijnenberg *et al* (1992)

Sulphonamides	100-300 mg/kg intermitting 3-2-3 days 100 mg/kg intermitting 5-2-3 days 25 mg/kg 7 days 200 mg/kg 7 days	oral oral oral oral	Sulfadimidine Sulfaquinoxaline Sulfamethoxasole
Benzeneacetonitrile derivatives	5 mg/kg once 15-20 mg/kg once	oral oral	Clazuril Toltrazuril
Rest group	40 mg/kg 7 days 10/10 mg/kg 5 days 18/1.14 mg/kg 7 days	oral oral oral	Amprolium Amprolium + sulfaquinoxaline Amprolium + ethopabate

Antiprotozoals

(After Frassen and Lumeij 1992)

The nitroimidazole drugs dimetridazole, ronidazole, carnidazole and metronidazole have been considered effective drugs for the treatment of trichomoniasis in racing pigeons. recently however many reports of ineffective treatments have been made, these are due to the development of in vivo resistance of T gallinae to nitroimidazole drugs. Frassen and Lumeij (1992) examined the effectiveness of these drugs. They found that resistant parasites could be propagated in culture medium with medium concentrations of nitroimidazoles except for ronidazole. They concluded that there was a lower level of resistance to ronidazole and that ronidazole was more suited to in vivo use than the others.

Guidelines and dosages of Trichomonacides

Nitroimidazoles

Carnidazole	20 mg/kg once	oral
Dimetridazole	50 mg/kg 6 days	oral
Metronidazole	50 mg/kg 6 days	oral
Ronidazole	4 mg/kg 6 days	oral
	*20 mg/kg 6 days	oral

Franssen and Lumeij (1992) have shown that in resistant strains a cure can be achieved by increasing the dose 5-fold to 20 mg/kg. A 10-fold increase to 40 mg/kg is tolerated by pigeons without side-effects.

References

Zwijnenberg R, Vulto J, Van Miert P and Lumeij J (1992). Evaluation of antibiotics for racing pigeons (*Columbia livia var domestica*). *Journal of Veterinary Pharmacology and Therapeutics*. **15**: 364-378.

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