Digoxin

(Digoxin*, Lanoxin*, Lanoxin PG*) POM

- **Client Information Leaflet:** Digoxin
- **Formulations**

Oral: 62.5 µg, 125 µg, 250 µg tablets; 50 µg/ml elixir. Injectable: 250 µg/ml.

- **Action**

Acts as an antiarrhythmic. Digoxin slows the ventricular response rate (heart rate) in atrial fibrillation by having a vagomimetic effect, predominantly acting at the AV node, therefore slowing AV nodal conduction. May also be used in other supraventricular tachyarrhythmias. Has a secondary mild positive inotropic effect. Inhibits Na^+/K^+ATPase, leading to an increase in intracellular sodium. Sodium is exchanged for calcium, resulting in an increase in intracellular calcium and hence positive inotropic effect. The combination of a slower heart rate and increased force of contraction increases cardiac output in patients with supraventricular tachyarrhythmias. Digoxin improves baroreceptor reflexes that are impaired in heart failure.

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- **Use**
    - Management of supraventricular tachyarrhythmias.
    - It is primarily used to control the ventricular rate in cases of heart failure with concurrent atrial fibrillation. Effective to decrease the ventricular rate in dogs with atrial fibrillation either as monotherapy or in combination with diltiazem. Digoxin/diltiazem combination therapy results in more effective rate control than monotherapy.

Serum levels should be checked after 7–10 days, with a sample taken at 6–8 hours after a dose. The bioavailability of digoxin varies between the different formulations (tablets ~60%, elixir ~75%, i.v. ~100%). If toxic effects are seen or the drug is ineffective, serum levels of digoxin should be assessed; the ideal therapeutic level is a trough serum concentration in the region of 0.6–1.2 ng (nanograms)/ml. The dose provided below achieves a therapeutic serum digoxin concentration (1.0–2.0 ng/ml) while minimizing adverse effects in dogs. Decreased doses or an increase in dosing intervals may be required in geriatric patients, obese animals or those with significant renal dysfunction. The intravenous formulation is rarely indicated and, if used, should be administered very slowly and with extreme care.

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- **DOSES**
    - **Dogs** Tablets: 2.5–3.5 µg (micrograms)/kg p.o. q12h based on lean body weight (decrease dose by 10% for elixir). Maximum dose 0.25 mg/dog p.o. q12h. Start at lower end of dose range and titrate upwards carefully based on clinical response and serum therapeutic levels. Only use i.v. if essentially indicated: 2.2–4.4 µg/kg i.v. q12h.

- **Cats** Tablets: 10 µg (micrograms)/kg p.o. q24–48h, equating to ¼ of a 125 µg tablet/cat q24–48h. Start at lower dose range and titrate upwards. Only use i.v. if essentially indicated: 1–1.6 µg/kg i.v. q12h.