VPIS Position Statement – Lipid infusion

Intravenous infusion of lipids in animals with poisoning can lead to a dramatic improvement in clinical condition, reduce hospitalisation time and save lives. It is a simple, easy to administer and cheap treatment.

Intravenous lipid infusion is used in the management of compounds that are lipophilic or cardiotoxic. Most veterinary cases reported involve baclofen, permethrin and macrocyclic lactones (moxidectin, ivermectin), but it has also been used for other drugs (see below). The product normally used is Intralipid® 20% (Fresenius Kabi) but other parenteral lipid products are available.

In most cases the suitability of a compound for treatment with intravenous lipid therapy is determined by two factors: its lipophilicity and half-life. Lipid infusion is suitable for lipophilic compounds with short to moderate half-lives (generally less than 24 hours); it is not suitable for lipophilic compounds with long-lives such as vitamin D compounds (e.g. calciferol, calcipotriol) and anticoagulant rodenticides (e.g. brodifacoum, bromadiolone).

The mechanism of action of lipid infusion is not fully understood and there are two main theories: a lipid sink mechanism and a metabolic effect. It is thought that the lipid component formed in the blood acts as a sink for lipophilic drugs making them unavailable to act on their target receptors. In drugs causing cardiotoxicity, lipids may reduce toxic effects by providing a source of energy to the myocardial cells.

The risks of lipid infusion in the context of treatment of drug toxicity (rather than as part of parenteral nutrition) are unknown, but it is generally considered safe. Pancreatitis and extravasation with pain and local swelling have been reported as adverse effects in veterinary cases.

Lipid infusion is increasingly used in the management of poisoning and should be considered for any animal at risk of serious toxicity after exposure to a lipophilic compound.

Further reading

General articles

Case reports