

ANAESTHETIC SENSITIVITY IN DOGS

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The so called Sight hounds or Gaze hounds are a group of dogs which all can be traced back to the extinct progenitor *Canis Familiaris Leineri*. The oldest living breed of these dogs is the Saluki which gave rise to the next group borzoi, afghan, italian greyhound and greyhound. All of these breeds lack the enzyme which removes the sulphur atom from the thiobarbiturates as the first step in their metabolism. Thus all these breeds if they are anaesthetised with a thiobarbiturate will, and do, have a prolonged recovery time compared with a breed which has the enzyme. This is what is referred to by non anaesthetists as "sensitivity" to anaesthesia. These dogs are not more sensitive to the agents involved they just can't metabolise them as well as they might.

Recovery from a single induction dose of a thiobarbiturate is largely by redistribution. The thiobarbiturates are highly fat soluble, and the brain is composed largely of fat so the drugs pass rapidly into the brain where they produce anaesthesia. From the brain they redistribute fairly quickly to the muscle and viscera which have a high blood supply, and very slowly to the fat depots which have a poor blood supply. So provided only enough is given to produce anaesthesia the actual recovery will still be rapid, but the post anaesthetic hangover will be prolonged. If the anaesthetic is continued with another drug less of it will be required as the thiobarbiturate will still be active.

The simple way around the problem in susceptible dogs is not to use thiobarbiturates. There are alternative methods of induction using a variety of other drugs which are safe and reliable which we can use. Some involve narcotic analgesics, others do not. Methohexitone an oxy barbiturate was used for many years in these breeds, unfortunately it is now unavailable, but one of the new induction agents propofol is extremely good in the sight hunters and is my induction agent of choice in these dogs.

Looking at the canine family tree many breeds of dog have the sight hunters in their ancestry this includes all the hounds, except the norwegian elkhound, and all the terriers, except the bull terriers, so it is not at all unreasonable for the inability to metabolise the thiobarbiturates to rear its head in the belgian shepherd or wheaten terrier but it certainly does not mean that these dogs pose more of a problem to anaesthetise provided that we know that, like greyhounds, they lack the enzyme.

Most, if not all, veterinarians know that the greyhound has the lack but do not know of some of the other breeds which share the problem. As more breeds are introduced into the australian dog world we rely on the breeders to give us this information, so, if you have a dog of a susceptible breed, you should make sure your veterinarian knows of the dogs problem.