

## Sex and Drugs – Topical Medicine and the Breeding Animal

The great Allan Sherman observed that skin “helps keep your insides in.” However, we also tend to erroneously believe it keeps other things outside, and that isn’t the case. Much of what contacts the outside of our skin makes its way inside and this is particularly true of drugs in the form of drops, ointments and salves, and not just the ones we apply to ourselves or our animals in special patches. It is important that we all read the information on the risks and contraindications of these topicals and weigh the benefits against potential negatives. Pregnant animals are especially at risk from all drugs, most of which have not been tested for safety in the pregnant animal. Products of particular concern include antibiotics (fluoroquinolones can inhibit cartilage formation, tetracyclines can inhibit dental enamel production, chloramphenicol can suppress bone marrow, and aminoglycosides may be neurotoxic); antifungals (zinc undecylenate and others are teratogenic), antivirals, chemotherapeutic drugs (teratogenic and abortifaciant); capsaicin (hot pepper based pain relieving creams and patches), sunscreen, Vitamins A and E and most especially corticosteroids. No matter the form of delivery the latter class of drugs suppresses the hypothalamic-pituitary axis (HPA), those wonderfully balanced hormones that control development, reproduction and aging as well as metabolism, electrolyte balance and so much more.

Most eye and ear preparations as well as steroid skin creams contain glucocorticoids that are readily absorbed and can suppress the HPA for weeks and at the same time elevate liver enzyme levels and reduce the numbers of circulating eosinophils and lymphocytes – blood cells that are part of the immune system. In one study dogs received an ear preparation containing steroids for 3 weeks. Their cortisol and blood cells levels remained suppressed for 7 days after the treatment was stopped, while the liver enzymes were elevated much longer.

In intact dogs, glucocorticoids affect both the hormones that regulate sperm production in the dog and also ovulation, pregnancy, and lactation in the bitch as well as the testes and ovaries themselves. Male dogs have lower levels of testosterone (two to three times less than the level needed to make sperm) and the testes atrophy. Libido though may be increased. In bitches, topical steroids can interrupt the estrous cycle, cause premature reproductive aging and possibly increase the risk of neoplasia. Given to a pregnant bitch - depending upon where she is in her pregnancy, and how long and at what dose steroids are given - they can result in resorption, abortion, stillbirth, premature birth and birth defects such as cleft palate and anasarca (water puppies). Normally the effects though will be transient in a mature bitch that isn’t pregnant. Female fetuses or pups exposed prior to puberty may have delayed or accelerated puberty and may even be rendered sterile as they fail to ovulate. If your vet prescribes steroids in any form to animals intended to be used for reproduction make sure the drug is really necessary and that it has the least potency and the shortest duration of action after withdrawal. Other hormones can also have a profound effect on pregnancy. Cimetidine is a common over-the counter product given as an antacid, but it can decrease androgen production and may contribute to cryptorchidism. Pain medications may be given topically or orally etc., but in pregnant animals opioids should be the pain medication of choice.

More people are aware of topical parasiticides when managing breeding animals. Most have not been tested for safety in pregnant animals. One that has is Revolution, but it is not effective against most tick species.

Finally, just because a product is natural doesn’t mean it is safe, many herbal products can be very dangerous when applied to our dogs, whether they are pregnant, in a breeding program or not. Please never assume something is safe. There may be more lives than one depending upon you.

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