Duty To Counsel To Prevent Estrogen Toxicity in Dogs

Estrogens and conjugates of estrogen are the primary female sex hormones for all mammalian species; however, exogenous exposure to estrogens can be extremely toxic to dogs. Both acute and chronic exposure to estradiol, estrone, estriol, conjugated estrogens, and diethylstilbestrol and all estrogenic substances can cause a fatal bone marrow suppression occurring 1-3 weeks after exposure. While the mechanism of action for estrogen toxicity has not been fully elucidated, it is known that estrogen induces the canine thymus to produce a factor which inhibits bone marrow granulocyte-macrophage progenitor cells. This factor is particularly potent in the canine species and can lead to complete bone marrow aplasia. The onset of estrogen-induced aplasia is insidious, and most dog owners will not recognize that toxicity has occurred until the dog becomes anemic, is having episodes of epistaxis, and is suffering from infection due to leukopenia. Chronic exposure to estrogen in low doses will cause more visible signs in dogs including feminization of male dogs (enlarged mammary glands and atrophied genitals), markedly swollen genitals in female dogs, and hair loss in both genders. Treatment of estrogen toxicity in dogs is difficult, expensive and may take many months, and dogs suffering from complete aplasia frequently die.

The best treatment for estrogen toxicity in dogs is prevention of exposure. Exposure is almost invariably due to ingestion of or dermal contact with estrogens intended for therapeutic use in humans. While risk of toxicity from ingestion of estrogenic substances is obvious, many pet owners fail to consider risk from dermal contact. Estrogen creams, patches and gels have become very popular dosage forms for therapeutic use and pose a significant risk of estrogen exposure to dogs who lick their owners. Estrogen and other hormones are also secreted through sweat glands, and dogs may be chronically exposed to estrogens from being hugged or handled by owners who are perspiring.

A recent news story from the Veterinary Information Network discusses several cases of estrogen toxicity resulting from contact with owners receiving hormonal therapy. In this article, Dr. Tom Murry of the Pharmacy Compounding Accreditation Board mentions the key role of pharmacist counseling in preventing estrogen toxicity in pets whose owners are receiving prescriptions for estrogen. For more information please follow this link: