

Article: Effects of testosterone on the prevention of T-2 toxin-induced adrenocortical necrosis in mice.

J D Thurman, D A Creasia, R W Trotter

[\[hide abstract\]](#)

ABSTRACT: To evaluate the effect of exogenous testosterone on the development of T-2 toxin-induced necrosis of adrenal glands, mice were allotted to 3 treatment groups. Each treatment group contained castrated male, and castrated and sexually intact female mice. Each mouse in group 1 was given 0.16 mg testosterone propionate at 48-hour intervals for a total of 12 injections, group-2 mice were given similar injections of only the vehicle, and group-3 mice were given no treatment. Twenty-four hours after the last injection, the mice in all 3 groups were exposed for 10 minutes to an aerosol of T-2 toxin. All mice alive at 24 hours after exposure were euthanatized and the adrenal glands and thymuses were examined histologically. Necrosis of the adrenal cortex was not found in any of the mice given preexposure treatment with exogenous testosterone, whereas all mice given vehicle only or no treatment had T-2 toxin-induced necrosis of the inner portion of the adrenal cortex. Lymphocytolysis in the cortex of the thymus confirmed that each mouse of all 3 treatment groups had experienced systemic mycotoxicosis. The uniform severity of the lesion in all mice suggests that the thymus was not protected by exogenous testosterone administration or by the castration status of the mice. We propose that T-2 toxin-induced adrenal necrosis in mice is prevented by the presence of testosterone.

American Journal

Article: Mycotoxicosis caused by aerosolized T-2 toxin administered to female mice.

J D Thurman, D A Creasia, R W Trotter

[\[hide abstract\]](#)

ABSTRACT: Thymus, spleen, adrenal glands, and small intestine of female mice exposed to aerosolized T-2 mycotoxin were examined at postexposure hours (PEH) 0.25, 1, 2, 4, 6, 9, 12, and 24. Lymphocyte necrosis was observed at PEH 1 in the thymus, spleen, and lamina propria and Peyer patches of the small intestine. Necrosis of small intestinal crypt epithelial cells was observed at PEH 2, and necrosis of parenchymal cells and increased number of neutrophils were seen in sinusoids of the adrenal cortex at PEH 4. These results indicated that the earliest microscopic evidence of T-2 mycotoxicosis after aerosol exposure was necrosis of lymphocytes in the thymus, spleen, and lamina propria and Peyer patches of the small intestine.

American Journal of Veterinary Research 12/1988; 49(11):1928-31. · 1.35 Impact Factor

Article: Testosterone Prevents T-2 Toxin-Induced Adrenal Cortical Necrosis in Mice

J. D. Thurman, D. A. Creasia, R. W. Trotter

[\[hide abstract\]](#)

ABSTRACT: To evaluate the effect of exogenous testosterone on the occurrence of T-2 toxin-induced necrosis of adrenal glands, mice were divided into 3 treatment groups. Group 1 mice received 12 subcutaneous injections of testosterone at 48- hr intervals prior to aerosol exposure to the toxin; group 2 mice received similar injections of only the vehicle, and group 3 mice received no treatment. Each treatment group contained castrated male, castrated female, and intact female mice. All mice alive 24-hr after a 10-min exposure to T-2 toxin aerosol were killed and the adrenal glands and thymuses examined histologically. Necrosis of the adrenal cortex was not present in any of the mice receiving preexposure

treatment with exogenous testosterone. All mice receiving vehicle only or no treatment had T-2 toxin-induced necrosis of the inner adrenal cortex. Additionally, the presence of lymphocytolysis in the cortex of the thymus, confirmed that each mouse of all 3 treatment groups had evidence of systemic mycotoxicosis. The consistent severity of the thymic lesion in all mice suggests that the thymic lesion was unaffected by exogenous testosterone administration or the castration status of the mice. We propose that, in mice, T-2 toxin-induced adrenal necrosis is prevented by the presence of testosterone. Keywords: Phytotoxins, Trichothecenes, Mycotoxins.04/1988;

Article: Adrenal cortical necrosis caused by T-2 mycotoxicosis in female, but not male, mice.

J D Thurman, D A Creasia, J L Quance, A J Johnson

[\[hide abstract\]](#)

ABSTRACT: Experimentally, adrenal cortical parenchymal cell necrosis was induced by T-2 mycotoxin in female, but not male, mice. The lesion occurred in the adrenal glands in 11 of 11 female and 0 of 10 male mice given a nose-only aerosol exposure to T-2 mycotoxin. The necrosis, restricted to the zona fasciculata, began at the X zone interface and extended peripherally to involve 15% to 70% of the zone. Both light and transmission electron microscopies were used to determine whether the cellular and subcellular damage involved parenchymal cells of the zona fasciculata. Extensive necrosis of cortical thymocytes and necrosis of lymphoid cells in follicles of the spleen, lymph nodes, and intestine-associated lymphoid tissue were observed in both sexes. This is the first report to describe adrenal gland necrosis associated with exposure to T-2 mycotoxin.

American Journal of Veterinary Research 06/1986; 47(5):1122-4. · 1.35 Impact Factor