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Effect of GABA on female reproductive hormones and ovarian tissues of albino rats

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Neurotransmitters are playing an important role in neuronal, neuromuscular and neuro-endocrine interactions through postsynaptic effect. The main site of neurotransmitters action is brain so any disturbance of their synthesis leading to neurological, mental and psychological disorders. GABA is the main inhibitory neurotransmitter in the brain. In the present study, the harmful effect of GABA on Female Reproductive Hormones and Ovarian Tissues were investigated. Fifteen Adult female albino rats were divided in to three groups; group one (control group n=20), group two (GABA treated group n=30rats were I.P injected GABA 1 mg/rat for 16days) and group three (recovery group without treating by GABA for 12 days n=15 rats), sera were collected every two days to determine LH, FSH, estrogen and progesterone hormones levels in follicular and luteal phases. Also ovaries were collected for histopathological examination. GABA showed significant ($P<0.05$) increase in the levels of LH, estrogen and progesterone while a significant ($P<0.05$) decrease in the level of FSH was observed. The ovarian histopathology showed by GABA revealed vasodilatation, hemorrhage, hyperplasia of interstitial glands and degeneration of oocyte. Interestingly, all these changes have not been completely recovered 12 days after last injection, although partial recovery of hormones and ovarian tissue were observed. It concluded that GABA has immediate harmful effects on female reproduction through hypophyseal-gonadal axis.

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The use of a new autologous regenerative blood-derived product for wound and lesion healing in elephants

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During a cowpox-infection the group (13) of elephants in Cologne Zoo developed mild to severe horn lesions in their hooves due to pox vesicles (infection-related complication) on the feet. Those vesicles undermine the (skin above the) horn and the sole, wich could lead to the loss of the horn/tissue unit and in severe cases the animal's death. All lesions were surgical treated. Local treatment was done by bathing the feet daily in solutions with antiseptics and the application of wound- healing ointments and creams. Three animals suffered from multiple erosions and showed signs of pain (lameness), therefore receiving Phenylbutazon (Butazolidin®, MSD, Animal Health, Chicago, USA). Wild animals lack cooperative behaviour, they have no possibility for containment avoiding licking and biting, and daily narcosis is not an option. As open ound persisted, a new autologous regenerative product optimised for wound healing, containing platelet rich plasma and major bioactive growth factors was used (PLTfix®, Fat-Stem Laboratories, Aalst, Belgium). The three elephants with most severe lesions were tested. At the laboratory PLTfix® was derived from anti-coagulated blood (100 ml). Within 72 h after blood retrieval the PLTfix® was sent back for therapeutic one-time application to the lesion by moisturisation. PLTfix® doses (1.5 ml) were mixed with 10 % DMSO (Wak-Chemie Medical GmBH, Steinbach, Germany), acting as a carrier additive. The first five days no changes were observed. After one week a fast growth of a firm regenerative granulation tissue was seen (full coverage). After 2 weeks the normal horn started to grow from the top and the sides. By that time lameness got resolved, indicating a decrease in inflammation and pain. Within a month the affected area was difficult to be told apart from the non-affected area in all three animals which received the PLTfix®, but not in the other elephants. PLTfix® proofed to stimulate wound healing andto aid rapid regenerationby a single one-time application.

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