



USE OF DOMPERIDONE TO TREAT PARTURITION AND LACTATION PROBLEMS IN ELEPHANTS

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Domperidone is a dopamine antagonist that stimulates prolactin secretion from the anterior pituitary gland after oral administration. It has been shown to have a wide margin of safety in numerous species, including rats, dogs, sheep, alpacas, women and horses. Doses for elephant reproductive problems have been based on metabolic scaling of treatment regimens for pregnant and nonpregnant mares. There are potential two uses of this drug that could benefit pregnant elephants:

1. Prevention of dystocia

Domperidone has been used effectively in mares to ensure easier parturition and to avoid problems associated with difficult births. The increase in prolactin stimulated by domperidone facilitates relaxation of the gluteal muscles, stimulation of mammary gland development, softening of the cervix, enlarging of the vulva, and enhancement of ‘broodiness’. We know that prolactin increases after the 7th month of gestation in both Asian and African elephants. Additional prolactin stimulated by domperidone might be of some use as a preventive measure against birthing difficulties and/or to improve maternal care immediately post-birth.

Treatment (~2.5 grams/d) should begin 14-28 days before expected parturition and continued daily until birth. If the dam nurses well, no further treatment is needed. If milk production is low, continue domperidone (2.5 grams/day) for another two weeks or until calf is suckling normally.

It is important to track changes in hormones to assess domperidone efficacy. Blood samples should be collected weekly for progesterone and prolactin analyses for several weeks (4-6 weeks) before treatment if possible (to establish the baseline), throughout treatment, and then for several weeks after treatment (2-4 weeks).

Note: one elephant has been treated in the last month of gestation, resulting in the birth of a healthy calf. Subsequent milk production and maternal behavior were reported to have been normal.

2. Treatment ofagalactia or poor milk production

Increased prolactin induced by domperidone can stimulate milk production, and in horses has been shown to stimulate milk production even in barren mares. Thus, for elephants that experience difficulty in nursing a calf after parturition, domperidone could ensure lactation continues until the cow-calf bond is formed and calf is able to nurse on its own. It might also increase the chances of calf acceptance due to prolactin's stimulatory effect on mothering ability. Treatment should begin as soon after parturition as possible, but it has been shown to successfully stimulate milk production given several weeks after birth (see below).

Treatment can begin immediately after parturition up to at least 8 weeks post-partum. Daily oral dose should start at 1.0 g/d for the first week, then increased stepwise weekly to 2 and then 3.5 g/d (the latter being equivalent to the horse dose of 1 mg/kg). When the calf is suckling normally and gaining weight, reduce domperidone in stepwise manner weekly to 1.5, 0.5, 0 mg/d.

Blood samples should be collected weekly during the treatment period for prolactin analyses and for 1 month before and after treatment.

Note: an Asian elephant was successfully treated with domperidone to stimulate milk production and reverse weight loss in the calf when treatment was initiated 8 weeks after birth.