

# TERMINATION OF PREGNANCY IN TWO NON DESCRIPT FEMALE DOGS BY USING MIFEPRISTONE AND MISOPROSTOL

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Methods for termination of pregnancy in dogs needed to prevent birth of unwanted litters. Two non descript bitches presented to the clinics with a complaint of mismating were treated with antiprogestagen Mifepristone and prostaglandin analogue Misoprostol. The first bitch with gestational age above 40 days responded after 36 hours of treatment initiation and five foetuses were expelled to the exterior. The second bitch below 40 days gestational age responded on fifth day and expelled two embryos. The Mifepristone combined with Misoprostol can be used effectively for termination of unwanted pregnancy in dogs within a short period with no side effects.

**Keywords:** Antiprogestagen, Mismating, Prostaglandin analogue.

Unwanted pregnancy in breeding female dogs is annoying problem for the owners. Unwanted litters from unplanned mating pose a difficulty of rearing and later adoption of the puppies. Medical termination of unwanted pregnancies is an alternative to the surgical intervention when future fertility of the animal is not going to be compromised and to avoid surgical risk and post operative complications. Use of many of currently available abortifacients is accompanied by severe side effects. Progesterone receptor antagonists were proven to be an effective and safe means to terminate unwanted pregnancy in dogs (Jyothi and Bharathi, 2015). Misoprostol is a synthetic prostaglandin E1 analogue is a highly effective uterotonic and is most useful compound for termination of pregnancy in woman (Aronsson *et al.*, 2007). The present paper reports termination of pregnancy in non descript female dogs using antiprogestagen mifepristone and prostaglandin analogue misoprostol.

## Case History and Treatment

Two non descript bitches belonging to same owner presented to the department of Veterinary Clinical Complex, CVSc, Proddatur with a complaint of misalliance approximately one month back. On abdominal palpation both found positive and the pregnancy was confirmed by ultrasound scanning in both bitches and the gestational age of first bitch was 41±1 days (Fig 1) and in the second bitch was 32±1 days (Fig 4). The antiprogestagen Mifepristone was chosen as abortifacient for both bitches with a combination of prostaglandin analogue Misoprostol. The treatment was initiated for both bitches on the same day evening Mifepristone @ 5mg/kg Bwt BID PO until discharges observed from vagina and Misoprostol @ 10ug/kg Bwt PO one dose after 24 hours of anti progestagen administration and once daily after initiation of abortion for next two days.



**Figure 1: First dog with gestational age above 40 days.**



**Figure 2: First dog aborting after 36 hours of treatment.**



**Fig 3: First dog after treatment showing involuting uterus(arrow)**



**Figure 4: Second dog with gestational age 32 days**



**Fig 5: Second dog scanned on third day of treatment to find intact Gestational sacs with live embryo**



**Fig 6: Expelled embryo from the second dog after fifth day treatment**



**Fig 7: second dog with no gestational sacs after treatment**

The first bitch with gestational age above 40 days responded after 36 hours of treatment initiation and five foetuses were expelled to the exterior. The bitch subjected to ultrasound scan after one week of treatment initiation found involuting uterus. The second bitch subjected to ultrasound scan on third day of treatment and found gestational sacs intact and live foetuses in it. The owner advised to continue the treatment and the bitch showed reddish bloody discharges on fifth day evening and expelled two embryos. Misoprostal administered for next two days and the bitch scanned to find uterus with little quantity of fluids and no evidence of gestational sacs after nine days of treatment initiation.

## Discussion

Maintenance of pregnancy in the bitch is dependent on ovarian secretion of progesterone by the corpus luteum throughout the gestation. Unwanted pregnancy in dogs can be terminated during mid gestation by pharmacological agents that interfere with the action or synthesis of progesterone. The aim of these methods is to complete abortion within the shortest time possible with minimal adverse effects and without impairment of fertility. Drugs used to terminate or prevent pregnancy vary in effectiveness and magnitude of side effects.

Progesterone receptor antagonist Mifepristone (RU486) has proven to be an effective abortifacient in the dogs. Following binding to the progesterone receptor, a progesterone receptor antagonist stabilizes the receptors structure by its high affinity and prevent progesterone from exerting its biological effect as also reported by Concannon *et al.* (1990). Pregnancy termination by the progesterone receptor antagonist Mifepristone causes increase in the concentration of PGFM, the main metabolite of prostaglandin alpha as also mentioned by Linde-Forsberg *et al.* (1992). Mifepristone terminates pregnancy in dogs, the resulting luteolysis suggests a possible luteal dependence on fetoplacental integrity and or a delayed sensitivity to pituitary,

uterine or ovarian effects of anti progesterone therapy.

In dogs, mifepristone terminates pregnancy by resorption when administered at a dose rate of 2.5mg /kg BID PO for 4.5 days beginning at day 32 of pregnancy. Abortifacient efficacy of mifepristone may be dependent on the serum concentration of progesterone present during treatment. Increasing the dosage to 10mg /kg/day might be an appropriate means to increase abortifacient efficacy during early pregnancy since no adverse effects were noticed. The completion of abortion by 36 h post administration in one bitch indicates that this combination may induce abortion within a very short period.

Misoprostol increases the activity of collagenase in the cervix, and it is a highly effective uterotonic, increases intracellular calcium levels, and causes contractions of the myometrial muscle. In the present case also the duration of abortion was shorter and this can be attributed to the synergistic effect of mifepristone with mesoprostol. The completion of abortion by in the present case by 1.5 and 5 days post treatment.

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