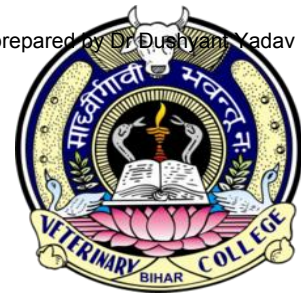




prepared by Dr. Dushyant Yadav



Animal Birth Control in Canine {Non- Surgical Interventions}

Prepared by-

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Animal Birth Control in Canine

Purpose:

- To Control the overpopulation
- To Prevent the birth of non-descript pups
- Inability of the owner to bear expenses involved with rearing of pups etc

Methods of Animal Birth Control

- Suppression of estrus in female
- Termination of pregnancy
- Ovariohysterectomy of female
- Castration of male
- Immuno-castration of male etc.

Suppression of Estrus

- **Light-** increase in day length
- **Progestogens used in the bitch and queen –**
 - negative feed back mechanism hypothalamus –pituitary axis
 - megestrol acetate, proligesterone, medroxyprogesterone acetate etc are used
- **Injection of progesterone-**
 - At an interval of 3 to 5 months
- **Oral dose of Progesterone-**
 - twice in a week upto 40 days
 - Queen- oral megestrol 5mg after sign of estrus and 2.5 mg upto estrus end
- **Androgens-** 30 days before anticipated estrus

Immunization procedure

- AntiGnRH- immunocastration of male animals



Indications of therapeutic management of Mis-mating

- For **reproductive management** of valuable bitches
- Control of pet **over population**
- Prevent birth of **non-descript pups**
- Bitches diagnosed with **dead fetus or malformed fetus**
- **Medical emergency** requiring termination of pregnancy in the bitch
- To avoid the **cost** related to pregnant bitches



Therapeutics of Mis-mating

prepared by Dr Dushyant



- ✓ Ovariohysterectomy
- ✓ Estrogens or synthetic estrogenic compounds
- ✓ Progesterone synthesis inhibitors
- ✓ Tamoxifen citrate
- ✓ Prostaglandin and its analogues
- ✓ Dexamethasone



- ✓ Dopamine agonists
- ✓ Combination of PGF2 α and dopamine agonists
- ✓ Anti-progesterone therapy
- ✓ GnRH antagonist
- ✓ Embryo toxic drugs and their combinations
- ✓ Non-hormonal compounds etc



Estrogen

- ✓ Interferes the **transportation time** in the oviduct and **tightens the uterotubal junction**, results in **implantation failure or embryonic death**

- **Estradiol Valerate**

- 0.01-3 mg/kg I/M or S/C, on 0, 3rd, 5th and 7th day after mating

- **Estradiol cypionate**

- 0.02 mg/kg I/M, not exceeding 2mg total dose only once after mating

- **Estradiol benzoate**

- 0.2 mg/kg I/M single injection on 2nd -5th day of mating total dose 1 mg max

- **Conjugated estrogens**

- 1.875 mg total dose daily for 3 days within 5 days of mating



Advantage-

- Early treatment of mis-mating

Disadvantages-

- continuous **estrous signs**, **anorexia**, and **weight loss**
- **Uterine diseases** like pyometra, endometritis, and cystic endometrial hyperplasia
- **Bone marrow depression** leading to severe anemia, leucopenia, thrombocytopenia and death



Prostaglandin and its analogues

prepared by Dr Dushyant



✓ PGF₂α and its synthetic analogues-**between days 30-53 of the gestation**

➤ Natural PGF₂α

- 0.1 mg/kg S/C TID for 2 days followed by 0.2 mg/kg S/C TID till termination of pregnancy
- Highly effective in inducing the parturition
- Side effects like panting, respiratory distress, hyper salivation, reflex defecation, vomition, stranguria, urination and bradycardia

➤ Cloprostenol (Synthetic PGF₂α)

- 1-3 (2.5) ug/kg I/M every 12-24 hr. till parturition
- Few systemic side effects
- Greater luteolytic effects



Progesterone synthesis inhibitors

prepared by Dr Dushyanth



- **Epostane**- 5 mg/kg for 7 days after mating
 - Inhibits the synthesis of progesterone by **blocking the enzyme β -hydroxy steroid dehydrogenase isomerase**

Tamoxifen citrate

- Estrogenic activity----**interfere in zygote transport and/or implantation**
- **1 mg/kg body wt.** P.O. BID for 10 days started on the day of mismating



Anti-progesterone therapy

prepared by Dr Dushyant



✓ synthetic steroids which are **progesterone receptor antagonists**

➤ Mifepristone

- **2.5 ug/kg body wt. BID P.O. for 4-5 days after day 25- 30 of gestation**
- Termination of pregnancy occurs mainly by resorption
- No major side effects
- Effective in around 80% cases
- Less available commercially

➤ Aglepristone

- **10 mg/kg body wt. S/C BID at 24 hrs. interval for 5-7 days**
- No apparent side effects on subsequent fertility
- Effective **from anytime to day 45 of the gestation with 100% efficacy** in between day 0-25 and 95-96% after day 25 of gestation
- Local pain or itching at site of injection
- Vaginal discharge starts in 1-2 days of treatment and remains upto 1-2 weeks
- **Mammary development** may occur in some cases



Dopamine agonists

prepared by Dr Dushyant



- Prolactin and LH are required for luteotropic action in bitches
- Dopamine agonists-ergot derivative having **anti-prolactinergic effects**

➤ Bromocriptine

- **30-100 ug/kg body wt.** BID P.O for one week starting at 35-40 days of gestation
- Side effects are vomiting, inappetance, anorexia, depression

➤ Cabergoline

- **5 ug/kg body wt.** OD P.O for 7-10 days
- Few side effects



Combination of PGF α and dopamine agonists

➤ Cloprostenol + Cabergoline

- After day 25-30 of gestation
- **Cloprostenol @ 1 ug/kg** body wt. S/C on alternate days 3 times
- **Cabergoline @ 5 ug/kg** body wt. OD P.O for 9 days
- It is **almost 100% effective** in all cases



GnRH antagonist

prepared by Dr Dushyant



- **Acycline @110-330 ug/kg body wt**
- Highly efficacious
- causes abortion within 6-7 days
- **used after mid-gestation**

Non-hormonal compounds

- **L-10492 and L-10593 etc**
- Used during **first half of gestation**
- Less availability
- side effects -decreased appetite, loss of body weight, and diarrhea coupled



Supportive Therapies

- Broad spectrum antibiotics
- Fluid therapy
- Antihistamines like chlorpheniramine maleate
- Analgesics (pain killers) or NSAIDs
- Multivitamins (specially Vit-C)
- Multi-minerals



Summary

- Combinations of drugs available
- Several side effects
- Side effects can be minimized- combination of drugs
- **Permanent solution -spaying**
- Time of gestation decide the schedules of therapy and there effectiveness



THANK YOU

