

استخدام هرمونات الخصوبة في علاج الأمراض التناسلية والسيطرة عليها
the usage of fertility hormones in treatment & control of
reproductive diseases

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Hormones are generally administered to animals for one of two reasons:

- 1) To correct deficiency of that hormone.**
- 2) To obtain a desired effect(e.g., post pone estrus).**

Hormones that are administered to an animal are called *exogenous* hormones, whereas those produced naturally are called *endogenous* hormones .

Hormonal drugs associated with fertility & reproduction In domestic animals

1- GnRH (**Gonadorelin**)

Which is produced endogenously by the hypothalamus and causes the release of FSH and LH by anterior pituitary.

GnRH is prepared synthetically.

Clinical uses

Gonadorelin is used to treat ovarian **follicular cyst** and **inactive ovaries** in dairy cattle. It has also been used in protocols of **Estrous synchronization**.

Commercial forms or preparations

1- **Receptal**

2- **Fertagyl**

2-Gonadotropins (FSH and LH)

A- *FSH* (Follicle Stimulating Hormone)

Which is released endogenously by the Anterior pituitary gland causes growth and maturation of the ovarian follicles in females and spermatogenesis in males.

FSH may be obtained from pituitary glands of slaughtered animals (FSH-p) and from the serum of pregnant mares (PMSG) between 40th and 140th day of pregnancy.

Clinical uses

FSH is used in veterinary medicine to treat *inactive ovaries* and to induce *superovulation* and for *out-of-season* breeding.

Commercial forms or preparations

- **Folligon**

B- **LH (luteinizing hormone)**

it is also released by anterior pituitary, causes ovulation in females and production of testosterone in male.

LH may be prepared from the pituitary glands of slaughtered animals or obtained from urine of pregnant women in the form of **human chorionic gonadotropin (hCG)**.

Clinical uses

hCG is used to treat gonadotropin is used to treat **follicular cyst (nymphomania)** and also **ovulation failure** in dairy cattle.

In males, it has been used to treat **cryptorchidism** and infertility caused by low testosterone levels.

Commercial forms or preparations

- **Chorulon**

3- ***Oxytocin***

Oxytocin is a poly peptide made in the hypothalamus and stored in the posterior pituitary for release in response to appropriate stimuli from the reproductive tract or mammary gland.

Clinical uses

- 1- To augment the force of uterine contractions during delivery.
- 2- To aid in delivery of the placenta.

3- To facilitate involution of the uterus (to reduce **bleeding** or to facilitate **replacement of a uterine prolapse**).

4- To induce **milk letdown**.

Commercial forms or preparations

- **oxytocin**

4- ***Estrogens***

Estrogens are a group of steroid hormones synthesized by the ovaries and to a lesser extent by the adrenal cortex and placenta.

Estrogen are necessary for normal growth and development of the female gonads.

They cause secondary female characteristics, and these hormones increase uterine tone, and increased the duct system development in mammary gland.

Clinical uses

- In cattle, estrogens are used to expel *purulent material* from uterus, and to expel *retained placentas* and *mummified fetus*, and to promote *weight gain*.
- In bitch, estrogens are used to induce *abortion* and to control *urinary incontinence*.
- In equine, they may be used for *induction of estrus* in the nonbreeding season.

Commercial forms or preparations

- **estradiol cypionate**
- **Diethylstilbestrol (DES)** compounded capsules and tablets.
- **Implants** to promote weight gain.

Side effects. They include follicular cysts, prolonged estrus and severe anemia.

5- *Progestins*

Progestins are a group of compounds that are similar in effect to progesterone.

Endogenous progestins are produced by corpus luteum. They cause increased secretions by the endometrium, decreased motility in the uterus, increased the secretory tissue development in the mammary glands.

Clinical uses

These hormones are used clinically to suppress estrus and to treat false pregnancy, behavioral disorders, and progestins-responsive dermatitis (in small animals).

MEGESTEROL ACETATE

Is a synthetic progestin labeled for use in bitch and cat.

In bitch , is used to control estrus, to treat **false pregnancy**, and to prevent **vaginal hyperplasia**.

To control **unacceptable male behavior**.

In cats, it is used for various dermatologic and behavioral problems.

Commercial forms or preparations

1- ovaban (tablets in bottles or foil strips)

2- Megace. (tablets).

MEDROXYPROGESTERONE ACETATE (MPA)

Is also labeled for use in bitch and cat.

Clinical uses

MPA is used for treatment of behavioral problems, such as **aggression ,roaming, mounting in male and treatment of certain **dermatologic conditions**.**

Commercial forms or preparations

1- provera tablets

2- Cyocrin tablets

ALTRENOGEST

Is an oral progestin labeled for use in equine.

Clinical uses

- 1- to suppress estrus for synchronization**
- 2- to suppress estrus for long periods**
- 3- to maintain pregnancy in mares with low levels of progsterone.**

Commercial forms or preparations

Rgu-Mate. Altrenogest in oil oral solution.

NORGESTOMET

Is a synthetic progestin that is used in combination with an estrogen (estradiol valerate).

Clinical uses

for synchronization of estrus in beef cows and non lactating dairy cows. A treatment consists of one implant and an injection at the time of implantation.

Commercial forms or preparations

-Synchro-mate-B

Side effects

These can include endometrial hyperplasia, hyperglycemia.

6- Prostaglandins

are a group of naturally occurring, of the six classes

(**A,B,C,D,E,F**), only prostaglandin F₂alpha has significant clinical application in the reproductive system.

prostaglandin F₂ alpha causes lysis of the corpus luteum, contraction of uterine muscle, and relaxation of the cervix.

Dinoprost Tromethamine

Salt of naturally occurring, is used in cattle, mares, sheep, goat, bitch, cat.

Clinical uses

-for estrus synchronization, and treatment of pyometra in cattle.

-for controlling the timing of estrus in anestrus mares that have corpus luteum.

-for treatment of pyometra, and endometrial hyperplasia and as an abortion – producing agent in bitch and cat.

-in sheep and goat has the same use as in cattle.

Commercial forms or preparations

-Lutalyse, prostamate

Fluprostenol

Is a synthetic analog of prostaglandin F2 alpha for use in mare.

Clinical uses

-estrus synchronization in cycling mares.

-to induce parturition in mares.

-to treat lactational anestrus.

Commercial forms or preparations

-equimate

Side effects

These include sweating, increased respiration, and abdominal discomfort.

Cloprostenol Sodium

is analog of prostaglandin F₂α for use in cattle.

Clinical uses

This drug is used for treatment of **luteal cyst** and **mummified fetuses**, and **estrus synchronization**.

Commercial forms or preparations

Estrumate





