Estro PLAN Injection

Bimeda®

Global Excellence in Animal Health

Active constituent cloprostenol (as sodium) 250 *gml
For luteolysis of functional corpora lutea in cows and mares

PHARMACOLOGY Prostagladins) are 20 carbon unsaturated fatty acids which consist of a cyclopentane ring with two aliphatic side chains. They are synthesized fom free arachidonic acid in most major tissues in the body and serve as local hormones, acting on tissues near their site of synthesis. PGs are structurally classified into nine major groups, A to 1, each containing subgroups denoted by the subscripts 1,2,3. In domestic animals the most important PG appears to be PGF2* dinoprost.

Actions

In the reproductive system PGs play a role in ovulation, luteolysis, gamete transport, uterine motility, expulsion of foetal membranes, and sperm transport in both the male and female tracts.

Pgs are employed in reproductive therapeutics primarily for their potent luteolytic effects. PGF2* causes rapid regression of functional corpora lutea, with resultant rapid decline in progesterone production.Luteolysis is usually followed by ovarian follicular development and a return to oestrus with normal ovulation. In catltle oestrus occurs 2-4 days after luteolysis, and in mares2-5 days after luteolysis. The early corpus luteum is insensitive to the effects of PG; in cattle and horses this refractory period spans the first 4-5 days post ovulation.

The precise mechanism of Pg-induced luteolysis is uncertain but may relate to blood flow changes in the uteroovarian vessels, inhibition of the normal ovarian response to circulating gonadotrophin, or stimulation of catalytic enzymes. PGF2* also has a direct stimulatory effect on uterine smooth muscle causing contraction, and a relaxant effect on the cervix.

Pharmacokinetics

Cloprostenol is rapidly distributed in the body following intramuscular administration. In cattle maximum tissue levels are reached within 30 minutes of dosing. Cloprostenol is eliminated in approximately egual amounts via the kidney and in bile. Excretion in urine is partly as unchanged cloprostenol, and partly as its tetranor acid both in conjugated and unconjugated form.

In cattle cloprostenol has a biological half life of 1.6 hours. Within 24 hours the concentration of cloprostenol at the injection site falls below the limits of detection. Cloprostenol does not accumulate in the mammary gland, with less than 0.75% of a given does eliminated in the milk.

CLINICAL APPLICATION

Cows

Cloprostenol induces luteolysis of functional corpora lutea, with return to oestrus in most cows in 2-4 days. Conception rate at the induced and subseguent oestrus periods are normal, and there are no detrimental effects on calves conceived following Pg treaqtment. However, it should be noted that the corpus luteum is refractory to the effects of PG in the first 4-5 days post ovulation.

1.Synchronisation of the oestrus cycles for controlled breeding.

Estroplan can be used in a number of treatment regimens to synchronise the oestrus cycle of groups of cows. Some of these are discussed below:

a)Individual cow program. Each cow is examined by rectal palpation and those with a mature corpus luteum are given a single injection of Estroplan. Oestrus should commence in most treated cows 2-4 days following treatment. This approach is suitable for small number of cows, e.g those used in embryo transfer or batch calving programs.

Traditional why-wait program. Heat detection is commenced 12 days prior to the mating start date. The herd is divided into earlier cycles (those seen in oestrus on or between days 12 and 7 prior to mating start date) and later cyclers (those seen in oestrus during the last 6 days prior to mating start date). Earlier cyclers are given a single injection of oestroplan on mating start date. Most of these cows should exhibit oestrus on days 7 to 9 of the mating period.

2.Routine use in the early postpartum period to improve reproductive performance

Routine treatment with cloprostenol in the early postpartum period can reduce the calving to conception interval in dairy herds. A number of factors are thought to be involved in this response: the myometrial stimulatory effect of PG resulting into more rapid uterine involution; a sparing effect on uterine infection; and the luteal effect providing more prompt treatment of cows with sub or silent oestrus or prolonged luteal phases. One or two treatment can be given between 12 and 40 days post partum.

Available pack: 20ml

3.Unobserved oestrus (in cows with normal corpora lutea)

Cows may be cycling but fail to display behavioural oestrus or display only very subtle sign. This condition occurs most commonly in yielding dairy cows at peak lactation. The presence of ovarian cyclical activity should be determined by rectal palpation of a normal corpus luteum prior to Estroplan administration. Oestrus should commence 2-4 days following treatment. Failure of oestrus induction may result if the treatment is given during the refractory period of the corpus luteum and will necessitate a further injection 11-14 days after the first.

4. Termination of unwanted normal pregnancies (e.g. following mismating

Pregnancy can be terminated by treatment with Estroplan from days 7-150 following conception. Between days 7-100 abortion is rapidly and reliably induced within 3-5 days of treatment. Between days 100-150 results may be less reliable due to decreasing role of luteal progesterone and increasing role of placental progesterone in the maintenance of pregnancy.

5. Termination of abnormal pregnancy (e.g. expulsion of mummified fetuses)

Foetal death may result in the mummification of the foetus in utero. Treatment with Estroplan at any stage of gestation will result in luteolysis and expulsion of the mummified foetus from the uterus. Occasionally manual removal of the foetus from the vagina is necessary.

6. Induction of parturition

Parturition may be induced using Estroplan alone but to optimize calf viability should be carried out as close to the predicted calving date as possible and should not be attempted prior to date 270 of gestation. Parturition normally occurs between 36 and 48 hours following treatment with Estroplan. All cows so induced should be closely supervised. As with all other methods used to induced parturition there may be a higher than usual incidence of retained foetal membranes. Any reduction in survival rate of calves born as a result of parturition induction is considered to be as a prematurity rather than an effect attributable to PG treatment. If earlier induction of parturition is required, treatment with Estroplan should be preceded by one or two treatment with a corticosteroid.

7. Retained foetal membranes, pyometra or chronic endometritis

Cloprostenol has a stimulatory effect on the myometrium , causing uterine contraction. This action can aid in the expulsion of retained foetal membranes. In the absence of septicaemia Estroplan may aid in the treatment of post-partum uterine infection via regression of the corpus luteum and stimulation of myometrial contractions.

8. Luteal cysts

Cystic ovaries may be associated with persistent luteal tissue, and treatment with Estroplan may effectively resolve such conditions and allow a return to normal cyclical activity.

Mares

Cloprostenol causes regression of the corpus luteum in mares except during the refractory period spanning the first 4-5 days after ovulation. Oestrus commences 2-5 days following Estroplan administration, with normal ovulation occurring 8-12 days after treatment. Conception rates at the induced oestrus are normal, and there are no deleterious effects on foals born as a result of cycle manipulation.

DIRECTION FOR USE

- Do not use in pregnant animals when abortion or induced parturition is not the objective.
- Do not administer intravenously.
- Do not use in mares suffering from acute or subcute disorder of the gastrointestinal or respiratory system.
- Cattle: Single or repeat doses of 2ml (500*g Cloprostenol) by intramuscular injection. Horses: Less than 400kg bodyweight: 0.5-1ml (125-250*g Cloprostenol) by intramuscular injection.
- Greater than 400kg bodyweight: 1-2ml(250-500*g Cloprostenol) by intramuscular injection.

WITHHOLDING PERIOD

Meat withholding period: Do not use less than 1 day before slaughter for human consumption. Milk withholding period: Nil

ADVERSE EFFECTS

Occassional side effect have been observed following intramuscular administration of PG. such effects are generally transient and have little detrimental effect on the animal. In cattle, increased body temperature and salivary secretion have been reported, usually associated with the administration fo 5-10 times normal dosage.

Storage: Store below 25^0C (Air Condition)
Protect from light. Dispose of empty container by wrapping and putting in garbage.

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