

Determination of the Dose of MPA (Medroxy Progesterone Acetate) in Intramuscular who Combined with Estrogen for Produce Pregnancy of the Fat Tailed Sheep

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ABSTRACT

In addition to the low population, livestock production problem in Indonesia especially sheep was reproductive and livestock management factors. Likewise, artificial insemination was only done when there was a natural estrus alone. Technology estrus induction and synchronization of estrus has not been done optimally. In order to improve reproductive efficiency and an increase in population, it was necessary a treatment of reproductive disorders, bullying efforts estrus and combined with artificial insemination. Hormonal preparations, especially the use of progesterone for the purpose of reproduction repairs done on the field one of which is for the induction of estrus. It is necessary for research on the induction of estrus using injections of progesterone combined with estrogen in IM and thus combined with artificial insemination in sheep, as a substitute for imported progesterone hormone drugs such as PIRD, CIDR and Syncromate B, which in addition to the price were expensive and rare. It takes as much as 20 Fat Tailed Sheep females who have confirmed once lambing and more than 1 year of age, who were randomly divided into four groups with each treatment get five replications. This research is that the injection PGf2 α 20 mg in the control (P0), MPA 100 mg + 10 mg estradiol benzoas (P1), 75 mg + 10 mg estradiol benzoas (P2) and 50 mg + 10 mg estradiol benzoas (P3). Pregnancy examinations conducted on day 21 after artificial insemination with the examination of blood serum with RIA methods and combined with USG at day 30 after artificial insemination. The results showed that the best dose to produce pregnancy in Fat Tailed Sheep is 75 mg MPA + 10 mg estradiol benzoas.

KEYWORDS: MPA, estrogen, pregnancy, Fat Tailed Sheep

INTRODUCTION

In addition to the low population, livestock production in Indonesia especially sheep which is often a problem is reproductive disorders and factor livestock management [1] such as frequent occurrence of mating repeatedly followed by waiting estrus 18 the next day, the incidence of silent estrus and infection after birth, and pregnancy and birth rates are low. Likewise, artificial insemination is only done when there is a natural desire alone. Technology estrus induction and synchronization of estrus has not been done optimally. In order to improve reproductive efficiency and an increase in population, it is necessary treatment of reproductive disorders, bullying estrus efforts combined with artificial insemination. Hormonal preparations, especially the use of progesterone for the purpose of reproduction repairs done on the field one of which is for the induction of estrus.

Estrus induction techniques or snapping estrus and estrus synchronization when carried out simultaneously in the livestock population in an effort to obtain estrus using PGF2 α and progesterone hormone [2,3]. Currently on the market progesterone preparations are progesterone release intravaginal device (PRID), control internal drug release (CIDR) and implant synchromate B [4].

The use of hormone progesterone group by pasting into the sponge conducted intra vaginal for 10-14 days in sheep and goats produce a low conception rates when mated to the appearance of the first estrus, when done in the next estrus period will get a high conception rates [5]. It is necessary for research on the induction of estrus using injections of progesterone combined with estrogen by intramuscular combined in sheep, as a substitute for imported

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progesterone hormone drugs such as PIRD, CIDR and Syncromate B (which in addition to the price is expensive and rare in Indonesia).

MATERIALS AND METHODS

This research was carried out for 8 months and is located at the Faculty of Veterinary Medicine, Airlangga University as well as the livestock group “Kepuh Makmur” at Kepuhkembang Village, Peterongan District of Jombang, East Java. Furthermore, it takes as many as 20 Fat Tailed Sheep females who have confirmed once lambing and more than 1 year of age, who were randomly divided into four groups with each treatment get five replications and after estrus do to artificial insemination.

The division of the research group as follows PO (control) : sheep given PGf2 α injection 20 mg (day of 1 and 12); P1: sheep given MPA 100 mg (day of 1) + 10 mg estradiol benzoas (day of 13); P2: sheep given MPA 75 mg (day of 1) + 10 mg estradiol benzoas (day of 13); P3: sheep given MPA 50 mg (day of 1) + 10 mg estradiol benzoas (day of 13). Pregnancy examinations conducted on day 21 after artificial insemination with RIA method and combined with USG at day 30 after artificial insemination. The study design used was completely randomized design and data analysis was performed using quantitative and qualitative analysis proportionally. Some kinds of data analysis used is Analysis of Variance (ANOVA) and the Test Honestly Significant Difference (HSD) [6].

RESULTS AND DISCUSSION

The principle of the use of progesterone of this method is to inhibit the secretion of FSH and LH from the anterior pituitary thereby inhibiting de Graaf follicle maturation and ovulation ovum. Progesterone administration would alter ovarian function and in a dose sufficient to inhibit ovulation. The hormone progesterone is a barrier against the release of gonadotrophin hormones which cause the animals to remain in a state of anestrus because it does not happen follicle growth [7].

Estrogen hormone injections typically used on livestock who experienced ovarian hypofunction. Ovalumon is a estrogen commercial product marketed by packing 30 ml containing 600,000 IU of ethinyl estradiol. Only estrogen hormone injections can cause symptoms invisibility of estrus but will not cause occurrence ovulation [8]. Furthermore, the use of estrogen is expected to be regressing dominant follicle so that it appears the dominant follicle from the next wave that produces good quality oocytes to improve fertility [9].

Table 1. Pregnancy success on Fat Tailed Sheep based examination of blood serum progesterone levels and USG

| Number | P0 | P1 | P2 | P3 |
|--------|----------|--------------|----------|--------------|
| 1 | Pregnant | Pregnant | Pregnant | Not pregnant |
| 2 | Pregnant | Not pregnant | Pregnant | Not pregnant |
| 3 | Pregnant | Pregnant | Pregnant | Pregnant |
| 4 | Pregnant | Pregnant | Pregnant | Not pregnant |
| 5 | Pregnant | Pregnant | Pregnant | Pregnant |

Based on table 1 above shows that the treatment of P2 showed the best success rate that resembles the P0 treatment. While treatment P3 showed a success rate of pregnancy, which was the lowest. This is in line with the results of the examination of blood serum estrogen levels are lowest at treatment P3 and the highest at treatment P2 [10]. Therefore, the best dose to pregnancy success is in treatment P2 or MPA dose of 75 mg + 10 mg estradiol benzoas.

The examples illustrate the Fat Tailed Sheep who success pregnant and not pregnant by ultrasound (USG) examination results can be seen as presented in the figure below.

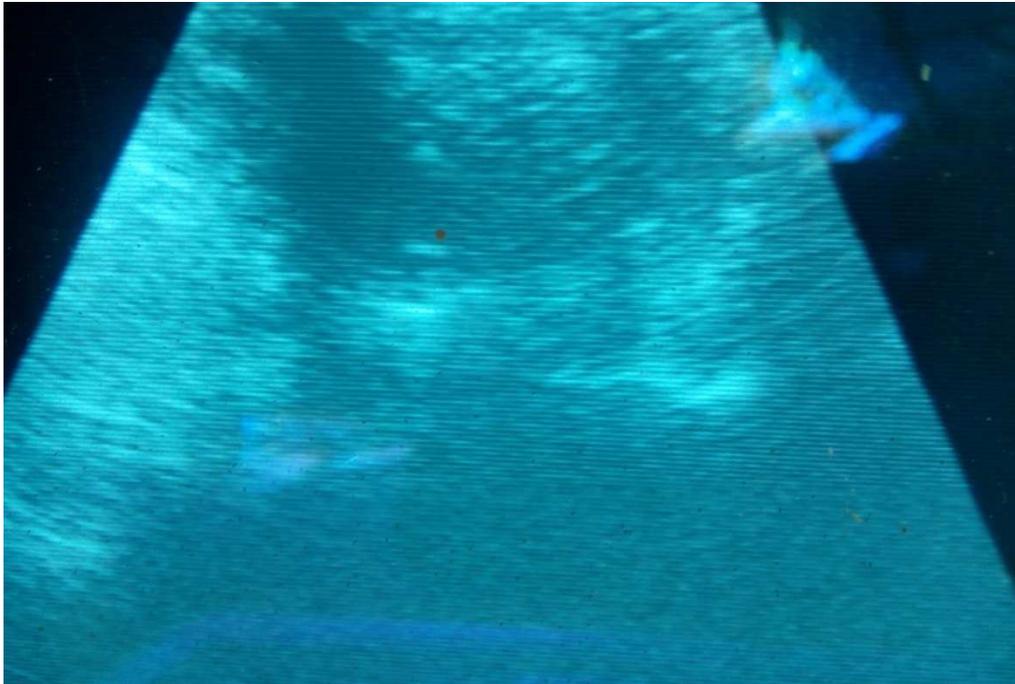


Figure 1. Results of USG Fat Tailed Sheep that were pregnant

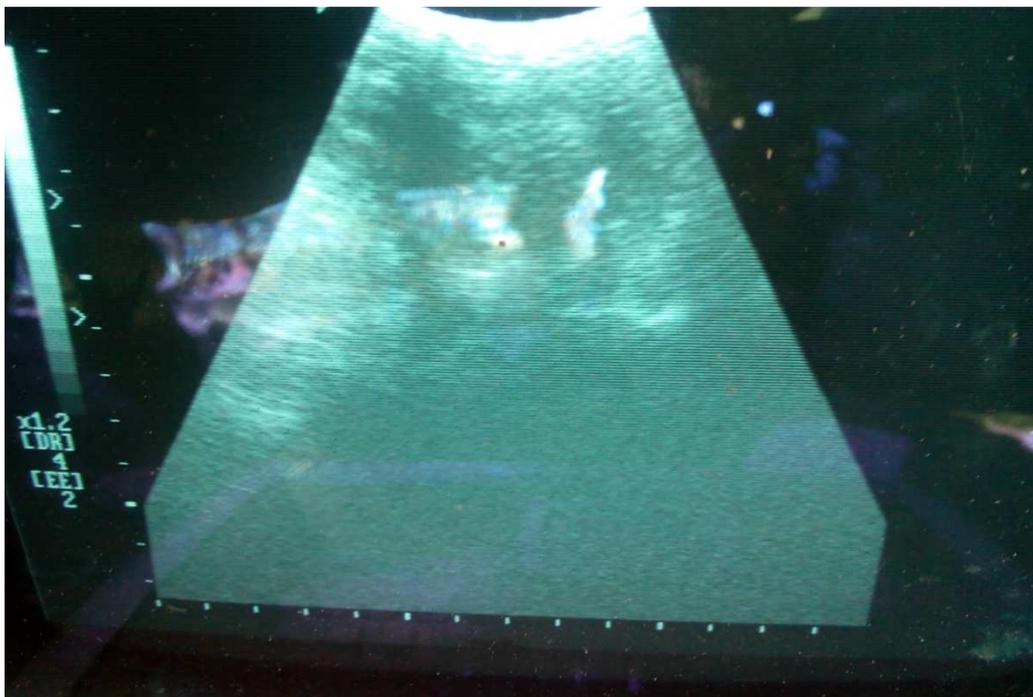


Figure 2. Results of USG Fat Tailed Sheep that were not pregnant

CONCLUSION

Based on the results of the study it can be concluded that:

The use of progesterone (MPA) intra muscular combined with estrogen (estradiol benzoas), the best dose to produce pregnancy in Fat Tailed Sheep is MPA 75 mg + 10 mg estradiol benzoas. Therefore, it is advisable to use a dose of 75 mg MPA + 10 mg estradiol benzoas intra muscular on Fat Tailed Sheep that may be made by breeders to be able to lead to success in pregnancy.

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