EFFECTS OF SELENIUM AND VITAMIN E INJECTION ON SOME REPRODUCTIVE PERFORMANCE IN AWASSI EWES

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Abstract

The present study was done on 12 Awassi ewes, presented in the farm of the veterinary medicine college / university of Fallujah. During the period from February to the end of March 2018, the age of the animals ranged between 3-4 years, the animals were fed with alfalfa and hay, the water is given ad libitum.

The animals were divided into two group after their numbering, each group contained 6 animals. The first group were treated with 4ml of selenium and Vitamin E (Biosele Vit E injection; each ml contains: 50mg d-α Tocopheryl acetate and 0.5 mg sodium selenite I.M. weekly, the drug manufactured by Bio-pharma, veitnam), The second group also contain 6 animals were given 4ml normal saline as placebo treatment.

Laparotomy were done in standing position at left flank sub- lumbar fossa incision under local anesthesia using 2% xylocaine hydrochloride HCL, the genitalia were exteriorized, the ovaries and uterus examined for the presence of follicles, Corpus luteum(C.L) or pregnancy. The peritoneum and muscles were sutured with lock stitch. The skin was sutured with horizontal mattress interrupted, The animals showed recovery without complications.

The results showed that there was a significant difference (P< 0.05) between reproductive parameters in treated and control group, there is an increase in numbers of follicles (2.16 ± 0.31) and C.L (0.88 ± 0.34) in treated group as compared with control group (0.33 ± 0.0) and (0.166 ± 0.00) respectively. It was concluded from this study that Se and Vit. E have a favorable effect on reproductive tract of Awassi ewes in non-breeding season, also in the presence of pregnancy in treated group was (50%).

Keywords: Selenium, Awassi ewes, reproductive performance, Vitamin E.

Introduction

Selenium and vitamin E acts as antioxidant that retard or prevent oxidative damage of the cellular molecule (Gutteridge and Halliwell, 1994), administration of Se can increase the lambs weight gain and their reproductive performance(Gabryszuk and Klewiec, 2002). Everybody is safe. Because it works in combination, E and selenium have been suggested to use together, preventing oxidative harm that improves immune skills (Hamam and Abou-Zeina, 2007).

Selenium and vit E have animportant effects on ruminantsactivity of thyroid (Pavlata et al., 2004) enhance serum GSH-PX production and increasing the minimum plasma concentration of antioxidant(Calamari et al., 2011) and goats (Katamoto et al., 1998).

Se transmit at a greatlevels from pregnant ewes to their offspring and deficits of Se may cause abortion in ewes (Amer, 2007). High incidence of retained fetal membrane might be due to impaired functions of neutrophils in selenium deficiency(Goff, 2006). The using of Selenium and
vit. E injection before mating may cause rise in the occurrence of oestrous, fertility rates and body weight of lamb at 60 day of age in ewe (Koyuncu and Yerlikaya, 2007). The objective of the current study was to explore the effects of injection Se. and Vit. E on genital system of Awassi ewes.

Materials and methods

The present study was done on 12 female Awassi ewes. The age of the animals ranged between 3-4 years. The animals were presented in a farm of the veterinary medicine college / university of Fallujah, during the period from February to the end of March 2018. These animals thendistributed into two groups after their numbering, each group contained 6 animals, the 1st group treated with 4ml of selenium and vit E (Bio sele Vit E injection ; each ml contains 50mg d- a Tocopheryl acetate and 0.5 mg sodium selenite) intramuscular weekly, the drug manufactured by Bio-pharma, vietnam.

The 2nd group were given 4ml normal saline as placebo treatment. Laparotomy were done standing position at left flank sublumbar fossa incision under local anesthesia using 2% xylocaine hydrochloride, 10-12 cm length incision was made, the genitalia were exteriorized and the ovaries held with two fingers.

The structures found in the ovaries in both group were counted. The genitalia examined weather pregnant or not, then the incision was closed with lock stich using catgut suture material. Intra-peritoneal antibiotics (oxytetracycline 20mg/kg/B.W) was given. The skin was sutured with horizontal mattress interrupted using silk no. 1 local antibiotics spray (tetracycline) and systemic I.M injection of L.A oxytetracycline were applied for 7 days until the removal of suture materials.

The animals showed recovery without complication (The figures below showed laparotomy in standing position in Awassi ewes for treated and control groups). Statistical analysis were done using student T- test according to Steel and Torrie (1980).

Figure-1- Picture showing the site of incision and exteriorization of female genital system

Results and Discussion

The current results of the study shown in (table 1), The uterus showed pregnancy in 3 ewes (50%), similar observation have been made by Huber (1988) and kolt et al. (1988). it is well documented that administration of Vit.E and Se decrease embryonic mortality of the fetus during pregnancy (Kolt et al., 1988), it has been reported that Vit. E have a beneficial influences on humeral immunity by increasing of immunoglobulin (IgG) (Lee and Han, 2018). It has been claimed that vit. E is essential to protect the neonatal contrast to the oxidative stress and is essential for development of immune system (Nayyar and Jindal, 2010).
Table -1 showed Effect of Selenium and Vit E injection on reproductive performance in Awassi ewes

<table>
<thead>
<tr>
<th>Parameters</th>
<th>No.</th>
<th>Treated group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of follicles</td>
<td>13</td>
<td>(2.16 ± 0.31)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>(0.33 ± 0.00)&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>No. of C.L</td>
<td>5</td>
<td>(0.83 ± 0.34)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>(0.166 ± 0.00)&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>3</td>
<td>50 %</td>
<td></td>
</tr>
</tbody>
</table>

Different letters showed significant differences (P<0.05)

This study showed that (P<0.05) there was a significant difference between the reproductive parameters in the Se and vit group. E in relation to the community function. Several scholars have found that selenium enhances the fertility of ewes and boosts wellbeing and the weight of lambs (Norton and McCarthy, 1986). The presence of high levels of follicular growth and corpus luteum development indicates in this work that Se and vit. E have a direct effects on reproductive events in ewes such as expression of oestrus and formation of ovarian structures. Similar observation have been made by Ziaei (2015). Otherwise the deficiency of Se and vit E leads to infertility and white muscle disease (Kumatet al., 2009).

Figure-2: pictures showing the ovaries contain follicle, corpus luteum and pregnant uterus

Conclusion and recommendations

It was concluded from this study that Vit. E and Se increasesthe reproductive performance in Awassi ewes in non-breeding season. It's recommended that giving of nutritional supplements containing Selenium and Vitamin E especially in non-breeding season.

References:


