Stage of contrast on the level sex hormone before sexual mature in Awassi lamb

D.J. Ibrahim
Collage of Agriculture\ University of Anbar

Abstract

The study was conducted on 4 male lambs of Awassi breed, Aged 4 months, presented in the farm of college of veterinary medicine, Anbar University, Anbar, Iraq. during the period from 10 May 2008, till 24 August 2008.

The study were undertaken to show the effect of age months on the level of sex hormone in male lambs of Awassi breed. 10 ml blood samples were collected weekly into heparinized vacutainer tube from the jugular vein of each lambs. Blood was centrifuged (1000 ×g for 10 min) within 1h of collection and plasma was stored at -20c^0 until. Plasma total testosterone concentrations, F.S.H. and ICSH were determined by ELAS. Testosterone was shown to be higher during 7 and 6 age months (0.682 ± 0.17 and 0.489 ± 4.17) mIU/ml^{-1}, 5 and 4. F.S.H was shown to be significantly increase ($P<0.05$) during 4 age month (24.928 ± 27.25) mIU/ml^{-1} as compared with 5, 6 and 7. ICSH showed to be higher during 4 and 5 (2.971 ± 3.01 and 2.555 ± 2.27) mIU/ml^{-1} as compared with 6 and 7.

It was concluded from this study that there was an effect of age months on the level sex hormone (Testosterone, F.S.H and ICSH).

مراحل تباين مستوى الهرمونات الجنسية قبل النضوج الجنسي للحملان العواسية

ظافر جميل إبراهيم
كلية الزراعة/ جامعة الأنبار

الخلاصة

استخدمت 4 من ذكور الحملان العواسية بعمر 4 أشهر، لدراسة مراحل تباين مستوى الهرمونات الجنسية (التستستيرون، الهرمون المحفز لنمو النطف والهرمون المحفز للخلايا البينية) قبل النضوج الجنسي، في الحقل الحيواني التابع لكلية الطب البيطري/ جامعة الأنبار، العراق. للفترة من 2008/5/10 ولغاية 2008/8/24. جمعت عينات الدم من الوريد الوداجي وتم قياس مستوى الهرمونات بواسطة جهاز ELAS.

لوحظ ارتفاع في مستو ى هرمون التستستيرون في شهري السابع والسادس من عمر الحيوان (0.682 ± 0.17 و0.489 ± 4.17) مايكروليتر/ مللتر مقارنة مع شهري الرابع والخامس. لوحظ ارتفاع معنوي في هرمون المحفز لنمو الحويصلات في الشهر الرابع (24.928 ± 27.25) مايكروليتر/ مللتر مقارنة مع الأشهر العمرية (الخامس، السادس والسابع). أما هرمون المحفز للخلايا البينية فقد ارتفع في شهري الرابع والخامس من عمر الحيوان (2.971 ± 3.01 و2.555 ± 2.27) مايكروليتر/ مللتر مقارنة بشهري (السادس والسابع).

نستنتج من الدراسة ان مستوى الهرمونات الجنسية تتباين في ذكور حملان الأغنام العواسية خلال فترة نمو الحيوان.

Introduction

The Awassi sheep is considered to be the most predominant and important sheep breed in the Middle Eastern countries. It is raised to provide mutton, milk and wool. Due to the good characteristics of the Awassi sheep, such as the quality of meat and milk, the ability to walk long distances, and the ability to cope with harsh environmental conditions, this sheep breed has been introduced to several countries (1).

In ram, the most important influence is the change in photoperiod which stimulates pituitary secretion of gonadotrophins and testicular activity when daylenght decreases, and suppresses secretory pituitary activity which results in reduced testicular activity when daylenght increases(2).

The aim of the present study was designated to show the effect of the age months on level sex hormones in Awassi lamb.

Materials and Methods

Four male lambs of Awassi breed, Aged 4 month and weight 15- 20 kg. presented in the farm of college of veterinary medicine, Anbar University, Anbar, Iraq. during the period from 10 May 2008, till 24 August 2008.

10 ml blood samples were collected weekly into heparinized vacutainer tube from the jugular vein of each lambs. Blood was centrifuged (1000 ×g for 10 min) within 1h of collection and plasma was stored at $-20c^0$ until. Plasma total testosterone concentrations, F.S.H. and ICSH were determined by ELAS.

Duncan multiple range test (3) and least- Squares analysis using the S.A.S program(4) were used for statistical analysis.

Results and Discussion

The puberty of rams usually occur at 5 to 6 months of age, depending some what on breed and season of birth. Spring born rams from temperate climates shows a gradual increase in testicular size that parallels changes in growth rate with a more rapid phase of testicular growth occurring in the fall, Changes in GnRH- induced L.H secretion drive the final maturation of the testes, including stimulation of testosterone secretion(5).

The levels of Testosterone was shown to be higher during in 7 and 6 month age (0.682 ± 0.17 and 0.489 ± 4.17) mIU/ml^{-1}, 5 and 4 month age. This results disagreed with those reported by Borque and Vàzquez, (6). This might be due to photoperiodic changes during different age months.

F.S.H showed a significant difference ($P<0.05$) during 4 month age (24.928 ± 27.25) mIU/ml^{-1} as compared with 5, 6 and 7. This results disagreed with those observed Langford, etal., (7).

ICSH showed higher during in 4 and 5 month age (2.971 ± 3.01 and 2.555 ± 2.27) mIU/ml^{-1} as compared with 6 and 7. This results similar to those observed by Langford, etal., (8).

The rise in L.H secretion that occurs during the peripubertal period is likely caused by First steroid- independent drive of hypothalamic GnRH secretion and Second a change in feedback inhibition of testosterone on the GnRH/ L.H axis. The importance of GnRH and L.H to drive events that lead to puberty is further shown by differences in age at which inadequately nourished rams reach sexual maturity because low planes of nutrition are associated with inadequate increments in L.H release (5).

It was concluded from this study that age months effects on sex hormone (Testosterone, F.S.H and ICSH).

Table (1) Effect of the age months on level sex hormone in Awassi lamb

Age\ Month	Testosterone mIU/ml^{-1}	F.S.H mIU/ml^{-1}	ICSH mIU/ml^{-1}
4	0.175 ± 8.56 d	24.928 ± 27.25 a	2.971 ± 3.01 a
5	0.429 ± 0.322 c	10.198 ± 16.71 b	2.555 ± 2.27 b
6	0.490 ± 4.17 b	4.665 ± 6.96 c	1.504 ± 0.62 d
7	0.682 ± 0.17 a	3.401 ± 1.35 d	1.543 ± 0.30 c

*** Mean± SE**

**** Means with the same letters vertically differed and the means vertically the different letters differed significantly (P<0.05).**

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