تأثير الديلتين على حركة الكرش في الماعز والجاموس والجمال

م ، هاشم ، فاطمه التايب ، م . شكرى

ثبت أن الديلتين يثبط حركة الكرش في الماعز ، كما أنه يؤدى الى زيادة التخمر الغازى في كرش الماعز والجاموس والجمال .

Faculty of Veterinary Medicine, Cairo University.
Dept. of Pharmacology.
Head of Dept. Prof. Dr. I. Shihata.

EFFECT OF DITILIN ON RUMEN MOTILITY IN GOATS AND RUMINAL GAS FERMINTATION IN GOATS, BUFFALOES AND CAMEIS.

(With 4 tables &I Figures)

By
M.M. HASHEM, F.A. TAYEB, and M.M. SHOUKRI.

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SUMMARY

1) Ditilin inhibit the movement of the rumen motility of goats.
2) Ditilin increase the ruminal gas fermentation in goats buffaloes and camels.

INTROUDUCTION

As goats, buffaloes, camels are very important sources of meat, milk; It has been found necessary to study the effect of muscle relaxant drugs on rumen. Since this organ is very eminents and because no work has been conducted on local breeds, the experiments were arranged to study the effect of ditilin on rumen motility in goats and ruminal gas fermintation in goats, buffaloes, and camels.

MATERIAL AND METHODS

Ditilin: (Pharmaco-Chemistery Institute, USSR)
Animals: Twelve goats were used, 9 females and three males weight 12 - 20kg, and 9-18 monthes old, Permanent rumen fistula was made in three goats to study the effect of the drug in doses of 0.5, 1.0 and 1.5 mg/kg. bwt. on rumen motility (SEIF EL-NASR, 1971) and also studying the effect of the drug on ruminal gas fermentation in doses of 0.25, 1.0 and 2.0 ml of concentration 100,000 on goats buffaloes and camels (SHIHATA et al. 1969).

Rumen samples were collected from rumen contents of freshly slaughtered buffaloes and camels.

RESULTS AND DISCUSSION

The normal motility in sheep under normal physiological condition without drug administration revealed the presence of primary and secondary cycle resembling those obtained in sheep by PHILLIPSON (1939) QUINN (1951) and REID (1963) and in cattle by SCHALK and AMADON (1928) and LECK (1969) and in buffaloes by SEIF EL-NASR (1971).

Ditilin produces reduction in rates of rumen motility. The injection of ditilin in doses 0.5 mg/kg bwt. results in slight reduction in rumen motility. When the larger doses 1.5 mg/kg bwt.were used the rumen motility revealed more reduction which appeared after 45 minutes. The amplitude of contraction and tone were slightly affected with smaller dose, but inhibited with larger doses. This is due to the effect of the drug on the muscles of the rumen (Table 1)and Kimograves. DANILON, (1953) and BOLIKOV (1957) used ditilin as a muscle relaxant in humans.

The importance of ruminal fermentation as physiological process in ruminants suggested the study of the effect of the muscle relaxant ditilin on gas fermentation in goats, buffaloes and camels. Experiments in this present study were first performed to evaluate the rate of gas production in vitro over 4 hours observation. Results obtained showed that the fermentation activity was found to be gradually increased with the passage of time.

The results obtained showed that the fermentation activity in goats, buffaloes and camels treated with our drug

was more greatly than normal control samples. Moreover it has been found that the larger concentration of Ditilin in treated samples, the higher in the fermentation activity (Table 2, 3 & 4).

Available literature lackes information about the effect of ditilin on microorganisms or plant enzymes.

REFERENCES

Bolkkove, A.A., (1957): Uses of ditilin in human clinic, in Moscow Vet. Med. J. 10., 4.136.

Danilov, A.F., (1953): The effect of ditilin on human , in Moscow Pharm. and Tox. J. 16, 6, 12.

Leek, B.F., (1969): Reticulo-ruminal function and dysfunction. Vet. Rec., 84 238 - 248.

Philipson, A.T., (1939): The movements of the pouches of the stomach of sheep. Q.J. Exp. Physiol., 29: 395-415.

Quin, J.I., (1951): Studies on the alimentary tract of Merino sheep in South Africa. XVIII. The effects of fasting on the activity of the ruminal flora of sheep and cattle. Ond. J. Vet. Res., 25: 51.

Reid, C.S.W. (1963): Diet and motility of the forestomachs of the sheep. Proc. N.Z.Soc. Anim. Prod., 23: 169-188.

Schalk, A.F. and Amadon, R.S. (1928): Physiology of the ruminant stomach (Bovine study of the dinamic factors). North Dakota Agric. Exp. State Bull. 216.

Seif El-Nasr, E.A. (1971): Function of buffalo stomach. M. D.Vet. Thesis., Cairo.

TABLE I Effect of Ditilin on rumen motility in goats;

Dose mg/kg	Kimogragh	Time minutes	Tone m.m	%	Am m.m	%	No.of contraction	%
0.5	I	Normal	6	I00	3	I00	I3	I00
	2	After 20min	4	66.6	4	I33.3	II	84.6
	3	" " " 60 ""	5	83.3	3	I00	II	84.6
I.0	I	Normal	8	I00	5	I00	9	I00
	2	After I5 min	4	50	7	I20	5	55.5
	3	" " " 35 min	4	50	5	I00	6	66.6
	4	" " " I00min	8	I00	5	I00	7	77.7
I.5	I	Normal	6	I00	4	I00	8	I00
	2	After I0 min	2	33.3	8	200	6	75
	3	" " " 45 min	0	0	0	0	0	0
	4	" " " 80 min	3	50	8	200	7	87.5
	5	" " "I40 min	6	I00	4	I00	8	I00

The table shows the effect of ditilin in different doses on rumen motility.

Table 2 Effect of ditilin on ruminal gas fermentation in goats.

Time/ Hours	Control Mean	Control S.E±	0.25 ml Mean	0.25 ml S.E±	0.50 ml Mean	0.50 ml S.E±	I.0 ml Mean	I.0 ml S.E±	2.0 ml Mean	2.0 ml S.E±
0.H	0.74	0.I5I	0.72	0.09I	0.86	0.II5	I.04	0.7I	I.36	0.I3I
I.H	I.54	0.222	I.90	0.08	I.72	0.I65	2.06	0.243	2.20	0.2I0
2.H	2.38	0.4I5	3.04	0.II5	2.9	0.2I7	3.04	0.608	3.I5	0.I7I
3.H	3.00	0.555	3.74	0.I08	3.53	0.I8	3.70	0.225	3.98	0.223
4.H	3.46	0.657	4.30	0.I02	4.22	0.209	4.32	0.225	4.44	0.327

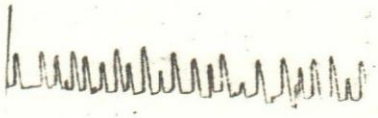
Table 3 Effect of Ditilin on ruminal gas fermentation in buffaloes

Time/ Hours	Control Mean	Control S.E±	0.25 ml Mean	0.25 ml S.E±	0.50 ml Mean	0.50 ml S.E±	I.0 ml Mean	I.0 ml S.E±	2.0 ml Mean	2.0 ml S.E±
0.H	I.08	0.I43	I.22	0.III	0.78	0.I25	I.36	0.I3I	0.88	0.099
I.H	I.88	0.I5I	2.26	0.I40	I.66	0.I43	2.24	0.I78	I.76	0.I40
2.H	2.50	0.I70	2.90	0.I4I	2.30	0.I26	2.86	0.I49	2.24	0.I04
3.H	2.78	0.I73	3.I8	0.I43	2.72	0.I33	3.I2	0.I66	2.74	0.238
4.H	3.48	0.I78	3.74	0.I6I	3.26	0.I40	3.72	0.I63	3.42	0.252

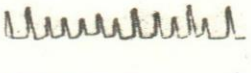
Table 4 Effect of D itilin on ruminal gas fermentation in camels.

Time/ Hours	Control Mean	Control S. E±	0.25 ml Mean	0.25 ml S.E±	0.50 ml Mean	0.50 ml S.E±	I.0 ml Mean	I.0 ml S.E±	2.0 ml Mean	2.0 ml S.E±
0.H	I.26	0.I34	I.38	0.I3I	I.5	0.069	I.48	0.I99	I.48	0.I3I
I.H	I.86	0.I69	I.98	0.I43	2.I6	0.083	I.94	0.I99	2.08	0.I45
2.H	2.28	0.260	2.44	0.I32	2.72	0.077	2.44	0.I93	2.56	0.I43
3.H	2.58	0.260	2.72	0.I48	2.96	0.083	2.76	0.2I8	2.92	0.I58
4.H	2.20	0.I60	3.40	0.I30	3.72	0.I70	3.80	0.024	3.80	0.I20

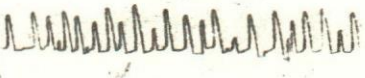
Effect of pilin in dose of 0.5 mg/kg. bwt. on rumen motility in cats.



K.I normal

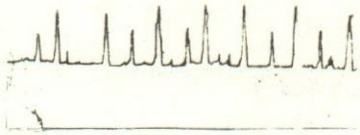


K.II 20 min. after inj.

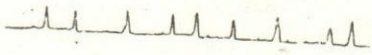


K.III. 60 min. after inj.

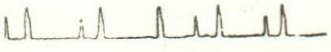
Effect of Ditilin in dose of I.0 mg/kg. bwt. on rumen motility in goats.



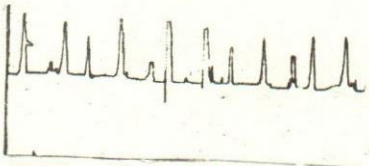
K.I. normal.



K.II. 15 min. after inj.

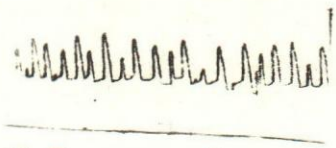


K.III. 35 min. after inj.

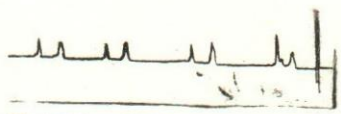


KIV. I00 min. after inj.

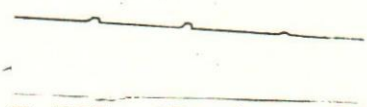
Effect of Ditilin in dose of I.5 mg/kg. bwt. on rumen motility in goats.



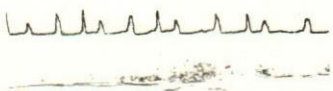
K.I. normal.



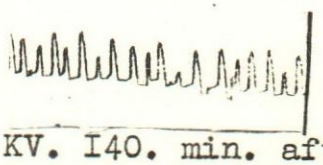
K.II. IO min. after Inj.



K.III. 45 min. after inj.



K.IV. 80 min. after inj.



KV. I40. min. after inj.