

Effect of Vitamin C on Survival Rate of With or Without Previously Handled Dystocia Affected Buffaloes Followed by Caesarean Section

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ABSTRACT

Dystocia in buffaloes has been traced back to 1928 in India and nowadays caesarean section is the routine treatment at referral hospitals for relieving dystocia in buffaloes. The dilemma of poor survival and fertility rate associated with caesarean section has stormed the minds of researchers since long time. Dystocia and its treatment procedures are potent stressors and higher cortisol levels have been observed in dystocia affected buffaloes. Vitamin C role as an antioxidant is well documented in literature and treatment with vitamin C reduces plasma cortisol in buffaloes. Survival rate following relief of dystocia by caesarean section appears to be slightly better following administration of vitamin C.

Key words: Buffaloes, Dystocia, Caesarean section, Vitamin C and survival rate.

INTRODUCTION

Dystocia means difficult birth and reports of dystocia in buffaloes has been traced back to 1928^{1,2}. Maternal and fetal factors have been reported to be the cause of dystocia in buffaloes with incidence of 59.16 and 40.84 % respectively³. Caesarean section and obstetrical mutation with partial fetotomy have been performed routinely in buffaloes to relieve dystocia⁴.

Caesarean section in buffaloes has been traced to 1930 in India^{5,2} and nowadays it

is the routine treatment at referral hospitals where most of cases are presented after unsuccessful interventions at field level. The dilemma of poor survival and fertility rate associated with caesarean section has stormed the minds of researchers since long time. However, Saini⁶ has reported 100 % survival rate in seven cases of buffaloes which underwent caesarean section within 24 hours of dystocia onset.

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Dystocia and its treatment procedures are potent stressors and higher cortisol levels has been observed in dystocia affected buffaloes^{7,8} and Mehra⁹ indicated greater tissue damage and higher degree of stress after caesarean operation in dystocia affected buffaloes as compared to the buffaloes in which dystocia was relieved by non-surgical means. Vitamin C role as an antioxidant is well documented in the literature as treatment with vitamin C reduced plasma cortisol concentration to 52.14% in comparison to untreated group to 38.63% in dystocia affected buffaloes which underwent caesarean section¹⁰. Therefore, the present study was designed with an aim to evaluate effects of vitamin C on survival rate of dystocia affected buffaloes which underwent caesarean section with or without previous handling.

MATERIAL AND METHODS

Twenty dystocia affected buffaloes were divided into two groups (control and treatment groups). Each group was comprised of ten dystocia affected buffaloes subjected to caesarean section. All the animals received routine supportive therapy consisting of parenteral antibiotics, dexamethasone, fluid therapy, haemostatic, vitamin B complex, anti-histaminic, Mifex, NSAIDS and intrauterine antiseptics post-delivery of the foetus. The buffaloes of treatment group were additionally given vitamin C, 30 ml (Inj. C Mac; contains ascorbic acid 250mg/ml, Macnor Life sciences Pvt. Ltd.) intravenously prior to caesarean and

then at 24 hour interval post caesarean only once.

RESULTS AND DISCUSSION

The data on survival of dystocia affected buffaloes following administration of vitamin C has been shown in table 1. The survival rate of the dam either with or without previously handled dystocia buffaloes was equal (40%) in both treatment and control groups. The survival rate appeared slightly higher in previously handled (28.57% v/s 20%) as well as in without previously handled cases (66.6 % v/s 60%) of treatment group compared to control group.

Higher survival rate (62.5%) was observed in those animals which were relatively fresh and not previously handled at field level as compared to survival rate (25%) of animals those had already been handled at field level.

There is no parallel report in the available literature to compare the present findings however, Ghuman¹¹ has reported higher survival rate of dam if caesarean section is performed at an early stage without previous handling. Moreover, several other authors have reported that obstetrical treatments for dystocia, whether rolling, mutations, fetotomy or caesarean section, are highly stressful and further extensive or mishandling of case increases stress level and can lead to significant reduction in the dam survival rate^{12,13,14}.

Table 1: Survival rate of dystocia affected buffaloes with respect to previous handling at field level

	Previous Handling of cases at field level		Survival rate			
	Yes	No	previously handled cases		without previously handled cases	
			Survived	Died	Survived	Died
Control group (n=10)	5	5	1 (20%)	4 (80%)	3 (60%)	2 (40%)
Treatment group (n=10)	7	3	2 (28.57%)	5(71.43%)	2 (66.6%)	1 (33.3%)
Percent	60%	40%	25%	75%	62.5%	37.5%

CONCLUSION

Survival rate following relief of dystocia by caesarean section appears to be slightly better following administration of vitamin C. Although, the number of animals in the present study is less to give a conclusive picture but a beneficial effect of antioxidant supplementation is indicated. Since the survivability of animal following dystocia can be influenced by several factors therefore, further investigations with large sample size are required in this regard.

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