

Prevalence of Gynaecological Disorders under University Ambulatory Clinical Set Up in Gandhinagar, Gujarat

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ABSTRACT

The association between gynaecological entities and its management in dairy animals improves reproductive efficiency of animals and subsequently owner's wealth. Thus, the objective of this study was to identify gynaecological disorders in milch animals and its management in an ambulatory set up under Kamdhenu University at Sanoda village located in Dehgam Taluka of Gandhinagar district, Gujarat. The village has above 3800 animal population. The cases presented for treatment at ambulatory clinics and used in this study were those reported for the first time. Over the period of three years (July 2017 to March 2020) 2552 bovine cases were categorized under surgery, medicine and gynaecology and were treated suitably. Of which 1774 (69.51 %) cases were of reproductive disorders, 617 (24.18 %) of medicine and 161 (6.31 %) were of surgery. Out of 1774 reproductive disorders, 1732 cases were of large ruminants. Among all infertility cases in cattle and buffaloes, the prevalence of endometritis (35.4% / 50.4 %) was highest followed by underdeveloped genitalia (26.2 % / 14.2 %) and anestrus (18.1 % / 23.4 %) and to mitigate this case load, there is a need to improve hygienic conditions while performing scientific AI.

Keywords: Ambulatory Clinic, Dairy animals, Field condition, Gujarat, Prevalence of infertility, Reproductive Disorders.

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INTRODUCTION

Animal husbandry sector plays a key role in enhancing GDP of India through milk farmers. Infertility among dairy animals is a major problem which causes economic losses to the farmers and needs quick solutions (Hadiya *et al.*, 2014). Ever increasing population enhances milk demand, which results in production stress to the dairy animals and production by dairy cooperatives. Milk production has a direct relation with reproductive efficiency of dairy animals and economic status is one of the reasons for inviting infertility leading to negative impact on livestock farming.

The major reproductive problems that have direct impact on production performance of dairy cows are abortion, dystocia, retained fetal membrane (RFM), pyometra, endometritis, metritis, genital prolapse, etc. classified as before gestation (anoestrous and repeat breeding), during gestation (abortion, prolapse and dystocia) and after gestation (RFM and genital prolapse) (Lobago *et al.*, 2006). Reproductive disorders have been found to be a major reason for decreased reproductive efficiency, which is a major determinant of lifetime productivity of dairy animals. Pregnancy rate after insemination plays a key role to determine profit or loss in dairy farming. Kamdhenu University has been running ambulatory clinics at Sanoda village of Dehgam tehsil in Gandhinagar district, Gujarat, since 2016. This study was planned to analyse routine Artificial Insemination (AI), pregnancy diagnosis (PD) and infertility problems addressed during the ambulatory clinic in dairy animals of this village.

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MATERIALS AND METHODS

Kamdhenu University provides ambulatory services, since July 2016 to animals at Sanoda village, Tehsil Dehgam, Dist: Gandhinagar, Gujarat, two to three days in a week. The village has above 3800 animal population. The cases presented for treatment at ambulatory clinics and used in this study were those reported for the first time and recorded as per the protocol and demographic record cards provided to the farmers. This study was conducted on case data recorded during July, 2017 to March, 2020.

The cases reported during ambulatory clinics were collected in excel sheets and classified as the entities of Surgical, Medicinal and Gynaecological disorders. In this study, the prevalence of reported gynaecological disorders and related entities categorized were AI, PD, underdeveloped genitalia (UDG), endometritis, metritis, pyometra and anestrus. The criteria for gynaecological entities such

Table 1: Distribution of clinical cases related to animal reproduction abnormalities

	UDG	Ovarian cyst	Endometritis	Metritis	Anestrus	Pyometra	Salpingitis	Mucometra	Total
Cattle	68 (26.2)	17 (6.5)	92 (35.4)	11 (4.2)	47 (18.1)	8 (3.1)	15 (5.8)	2 (0.8)	260
Buffaloes	91 (14.2)	27 (4.2)	323 (50.4)	35 (5.5)	150(23.4)	4 (0.6)	9 (1.4)	2 (0.3)	641
Total	159(17.6)	44 (4.9)	415 (46.1)	46 (5.1)	197(21.7)	12 (1.3)	24 (2.7)	4 (0.4)	901

Figures in parentheses indicate per cent frequency within the row.

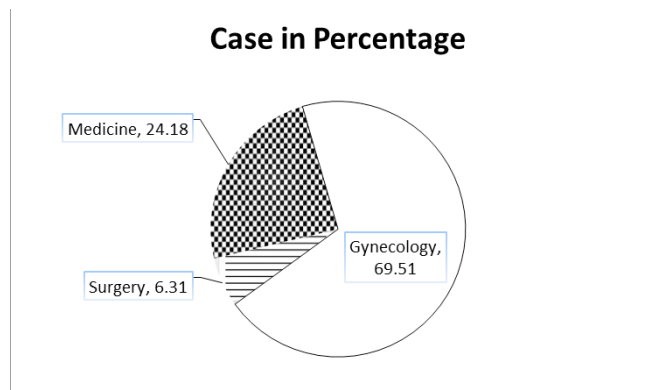


Figure 1: Percent distribution of cases presented at Ambulatory clinics, Sanoda, Gandhinagar according to Veterinary Surgery, Medicine and Gynaecology

as UDG, endometritis, metritis, pyometra and anestrus were used as per the standard text book (David *et al.*, 2009). For each entity percentages over total gynaecological disorders were calculated for cattle and buffaloes separately and as a pooled.

RESULTS AND DISCUSSION

A total of 2552 cases were presented at ambulatory clinics, Sanoda during July, 2017 to March, 2020. In all 1774 (69.51 %) cases of gynaecology, 617 (24.18 %) of medicine and 161 (6.31 %) of surgery were presented (Figure 1). Number of cases related to gynaecology were more in cattle (478) and buffaloes (1254) than surgery and medicine. Animals in estrus subjected to AI were 97 cattle and 208 buffaloes. In all, 121 cattle and 405 buffaloes with a history of insemination / natural service were presented for PD. Cases presented for incidence of various reproductive disorders observed by gynaeco-clinical examination in cattle and buffaloes are presented in Table 1. Total 260 cattle and 641 buffaloes were treated for infertility. The number and frequency of cases diagnosed and managed for UDG, ovarian cyst, endometritis, metritis, pyometra, salpingitis, anestrus and mucometra (Table 1) revealed the highest prevalence of endometritis, followed by anestrus, UDG and others. Buffaloes with endometritis and anestrus were more than other gynaecological problems. As compared to buffaloes, the numbers of UDG and endometritis cases were more in cattle.

Fertility is a multifactorial trait and its deterioration is caused by interplay of genetic, environmental, managerial factors, and its complex interactions make it difficult to

determine the precise reason for its decline (Walsh *et al.*, 2011). Incidence of reproductive disorders in multiparous cattle and buffaloes are widely reported in India. In earlier studies, anestrus was found to be the major form of infertility in cattle and buffaloes (Thakor and Patel, 2013; Harichandan *et al.*, 2018). Anestrus and repeat breeding are the two major reproductive diseases affecting 30-40 % of Indian bovines (ICAR, 2013). Repeat breeding is a broad term which rather we made specific infertility cases here in this work.

In a survey by Patel and Ponnusamy (2018) late sexual maturity and anestrus were ranked as first and second major reproductive problems among the non-descript cattle, indigenous cattle and buffaloes in Haryana, Madhya Pradesh and Chhattisgarh. Similar to our finding Bhattacharya (2012) reported the highest prevalence for anestrus (31.64%) in 53,354 cattle. The disorders like ovarian cyst, dystocia, abortion, vulvitis, vaginitis, cervicitis, mummification, maceration etc. were recorded by them, yet the rate was within clinically acceptable limits.

The risk of uterine infection is increased in cows with twins, stillbirth, dystocia or RFM (LeBlanc, 2008), and this type of infection has negative consequences for the subsequent establishment of pregnancy (Gilbert, 2011). Up to 50% of modern dairy cows have abnormal postpartum estrous cycles (including 10 to 50% with anovulatory anestrus), resulting in increased calving to first insemination intervals (Santos *et al.*, 2009) and decreased conception rates (Garnsworthy *et al.*, 2009). Further postpartum metabolic health, energy balance, immunity and interaction between these factors increase risk of postpartum anestrus, metritis and metabolic health of cattle and buffaloes (LeBlanc, 2008; Suthar *et al.*, 2013; Sheldon *et al.*, 2019).

This work also suggest that reproductive health management under university ambulatory clinical set up in a village Sanoda facilitates early diagnosis and treatment, avoiding drudgery of distant transportation to referral clinics, thus improving economic status of farmers in short duration. Further we concluded that entities like prevalence of UDG, endometritis and anestrus are high in cattle and buffaloes at ambulatory clinics, Sanoda, Gandhinagar.

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