Title of the Project: "Studies on urohydropropulsion and tubecystostomy for surgical management of urolithiasis in goats"

Duration of the project: Two years 2018-19 & 2019-20

Total Sanctioned Budget: one lakh

Introduction

Obstructive urolithiasis is the retention of urine subsequent to lodgement of calculi anywhere in the urinary tract. The disease results in heavy economic losses to the livestock industry as it is attributed the fifth most prevalent cause of death in domestic animals (Makhdoomi and Gazi, 2013). It is a most common problem in goats. Male goats are increased risk for this condition, compared with female goats, because of the length and curvature of the urethra and the presence of a urethral process with a narrow diameter in which calculi can become lodged (Van *et al*., 1996; Halland *et al*., 2002). An overall incidence of 5.04 percent in animals has been reported in India. The species wise incidence has been reported as: goats 49.83 percent, cattle 32.87 percent, dogs 14.53 percent, horses 1.38 percent, sheep 1.04 percent and cats 0,34 percent (Amarpal *et al.*, 2004).

Clinical signs in small ruminants will vary depending on the duration of obstruction, the site of obstruction, and whether a rupture has occurred. Early clinical signs associated with obstruction include signs of colic. Animals may have an arched stance, tread their feet, swish the tail, or kick at their belly. Less specific signs include rectal prolapse, rumen stasis, tachycardia, and tachypnea. If left untreated, obstruction of the urinary tract may result in urethral rupture or urinary bladder rupture. After rupture has occurred animals generally have a short reprieve from the pain associated with the distention. At this time, they may appear to be clinically normal to the producer. However, depression, lethargy, and anorexia will soon set in. In cases of urethral rupture swelling, oedema, cellulitis, and necrosis of the subcutaneous tissue caudal to the preputial orifice will occur.

Despite sophisticated surgical techniques and various supportive treatments prognosis of urolithiasis in bovine still remains unpredictable (Honeck et al., 2009; Sharma et al., 2009). Based on the common problem in male goats. The present work was planned with following objectives.

- **To compare urohydropropulsion and tubcystostomy technique for surgical managements of urolithiasis in goats.**
- **To record the biochemical changes and oxidative stress in goats suffering from urolithiasis.**

Fig.4- Intact urinary bladder scanned with 4.5 MHz sector probe showing hyperechoic (bright) surface of circle i.e. urinary bladder wall filled with anechoic (Black) urine Diameter D1 (Depth)and D2 (width)

Fig.5: showing urethral process lodged with calculi in the lumen

Fig. 6: Flushing of urethra in male goat with saline (Urohydropropulsion)

Fig.7: Diversion of urine in obstructive urolithiasis of male goat with folley's catheter (Tubecystostomy)

Fig.8: Post operative tubecystostomy in male goat with obstructive urolithiasis, urine diverted and draining through catheter.