

# A Drug Regimen for Leptospirosis Treatment in Cattle - A Field Trail Report

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**Abstract:** Employing leptospirosis affected 120 cross bred cows, a treatment regimen was tried. *Leptospira interrogans* serovar *Pomona* was isolated. Among six trial groups tried with different drug regimen, the recovery percentage was 40, 70, 80, 50, 20 and 92.8 respectively. 8 gms of dihydrostreptomycin on the first day, and from 2<sup>nd</sup> to 5<sup>th</sup> day procaine penicillin 30, 00, 000 IU, penicillin G 10, 00, 000 IU, streptomycin sulphate 5 gm (Bistrepen- Alembic) administered intramuscularly was found to be the best regimen.

**Keywords:** Cows, drug regimen, leptospirosis

## 1. Introduction

Considering various factors, a treatment regimen for Leptospirosis is developed. Trails were conducted at various parts of Tamilnadu, India.

## 2. Material and Method

One hundred and twenty cross bred cows were employed in this four year study. The cows were divided into six groups. Each group upto fifth had ten cows and seventy cows in sixth group. All the cows were showing the following symptoms, temperature 40- 41.5<sup>o</sup>C, dullness, anorexia, depression, paler to icterus mucous membrane, hypogalactia, some cases showed hydraemia and arching of back while micturition. The disease was recorded as acute and subacute form. Owing to field limitations, it was not possible to do laboratory tests. Random urine and serum samples were collected. Clinical and laboratory diagnosis confirmed the leptospirosis.

Group I had oxytetracycline 3000-4500mg (Pfizer), group II had dihydrostreptomycin 4-6 gms (Ambistrin- Glaxo), group III had penicillin G 75, 00, 000 IU (Sarabhai), group IV had ampicillin 6-8 gms (Ranbaxy) and group V had amoxicillin 4-6 gms (Intamox- Intas). All the drugs were administered twice daily for 5 days intramuscularly reconstituted with distilled water. No other drugs given.

Group VI had 8 gms of dihydrostreptomycin on the first day, and from 2<sup>nd</sup> to 5<sup>th</sup> day procaine penicillin 30, 00, 000 IU, penicillin G 10, 00, 000 IU, streptomycin sulphate 5 gm (Bistrepen- Alembic) administered intramuscularly. No other drugs were given.

Seven days after treatment random serum and urine samples were taken again for laboratory tests.

## 3. Result

Among the six groups, clinical recovery was 40, 70, 80, 50, 20 and 92.8 percents respectively. Recovery was assessed by return to normal habits and yield. Laboratory findings of

pre- and post- treated cows revealed 75 and 10 percents positive for spirochete presence respectively and *Leptospira interrogans* serovar *Pomona* was identified.

## 4. Discussion

Usually various drug regimens are employed for Leptospirosis like oxytetracycline, dihydrostreptomycin, penicillin, ampicillin (Smith et al., 1996 [1]), amoxicillin (Smith et al., 1997 [2]), tilmicosin, ceftiofur (Alt et al., 2001 [3]) and erythromycin (Bolin et al., 1999[4]). These regimens are usually in extra label dosages (Smith, 1996 loccit and Alt, 2001 loccit) and many are nephrotoxic (Smith, 1996 loccit).

In this trial, dihydrostreptomycin was used on 1<sup>st</sup> day at the rate of 25mg/ kg body weight for elimination of leptospiruria (Radostits et al., 1994 [5]) and subsequently streptopenicillin for four days for the treatment of systemic infection. This regimen was found to be comparatively economical, more effective and less time consuming in field condition.

Guidugli et al., 2003 [6], has reviewed various trails on antibiotics for leptospirosis and has concluded as antibiotic regimen for treatment of leptospirosis is a form of care for which the evidence is insufficient to provide clear guidelines for practice. He continued as, the randomised trials suggest that antibiotics could be a useful treatment for leptospirosis, because of the questionable quality of trials, the indication for general use of the antibiotics is uncertain, however the evidence suggest the penicillin may cause more good than harm.

## 5. Conclusion

A new combined drug regimen of dihydrostreptomycin, procaine penicillin, penicillin G and streptomycin sulphate was found effective for treating leptospirosis in cattle.

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