GANGRENOUS SYNDROME (DEGNALA DISEASE) IN COWS AND BUFFALOES IN BIHAR AND ITS THERAPEUTIC MANAGEMENT

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ABSTRACT
Gangrenous syndrome (Degnala disease) is a severe problem in cows and buffaloes occurring periodically in low lying water lodged areas after flood and rainy seasons in Bihar, where rice straw is main fodder with little green and concentrates. Out of various severely affected cows and buffaloes with gangrenous syndrome (Degnala disease) three cows and 12 buffaloes were treated with the combination of five sulphates and other supportive medicines. One cows and 4 buffaloes had severe lesion, died during the course of the treatment. Recovered animals were survived with sloughed hooves, tail and extremities of the ears and curling of ear borders with completely healed wounds.

Key words: Gangrenous syndrome, degnala disease.

Gangrenous syndrome is an obscure disease. Large numbers of clinical cases of gangrenous syndrome (Degnala Disease) had been observed in cattle and buffaloes in various districts of south and north Bihar. Both buffaloes and cattle were found affected but the morbidity and mortality in buffaloes were higher than cattle. No age and sex variation was noticed in occurrence of the disease. The rice straw was the main fodder with little green and concentrates. The pasturelands of those areas were flooded during 3 to 4 months of rainy season. The disease had invariably been observed in herds fed improperly stored feed materials with little green grass. The feeding habits of the affected animals were same. The primary feed fed to the animals was comprised of old paddy straw. The rice straws fed to the animals of the diseased herds in almost all cases were mouldy, moist and not dried properly. The disease appeared with discomfort, weakness, rough body coat, alopecia and marked swelling of fetlock region. Multiple cutaneous and subcutaneous lesions of dry gangrene were present on the extremities such as limbs, ear tips and tail. In some animal there was sloughing of hooves and tail and other extremities with open wound.

MATERIAL AND METHODS
The occurrence of gangrenous syndrome was reported from nearby village of Patna (Bihar) in cows and buffaloes. Three cows and 12 buffaloes affected with gangrenous syndrome were selected for the treatment. Almost all selected animals were severely affected and animals were showing important, advanced and delayed symptoms and lesions of the disease like swelling, development of oedema necrosis gangrene and sloughing of the limbs (hooves), tip of tail and ear with curling of ear border. The pathognomic symptoms comprised of dullness, emaciation, anorexia, rough body coat, dandruff formation with appearance of scale, alopecia, patches of hair loss on their back, chest, neck, and shoulders, lameness in hind limbs and fore limbs. Hind legs were found frequently involved than the forelegs. During development of the disease, hooves were found affected first than other parts like tail and ears. Skin of swollen extremities was necrosed and peeled off forming open wound with pus and fluid accumulation in gangrenous lesion near knee and hock joint. In 2 cows and 4 buffaloes a crack appeared in fetlock region to separate the gangrenous and deformed portion lead to sloughing off hooves followed by secondary bacterial infections. Lameness and pain was so severe, that limbs were unable to bear their own body weight and animals were found reluctant to move and went recumbent. Body temperature was slightly high in the beginning but there were no change of body temperature during entire period of the treatment. There were marked reductions in the milk yield in affected lactating animals.

Treatment: Feeding of the old stock of rice straw to all affected animals was completely stopped. All animals were treated with the combination of five sulphate preparation comprised of Magnesium sulphate 23.44 gm, Ferrous sulphate 03.89 gm, Copper sulphate 0.56 gm, Zinc Sulphate 1.76 gm and Copper sulphate 0.35 gm. (Panchgandha) 1 @ 30 g orally daily for 60 days. Teburb2 capsule had been given @ 2 cap orally bid daily for 60 days for skin infection. For the dressing of the wound, herbal preparation, Himax2 ointment was used for local application. Supportive treatment followed with Intavita-H3 inj. @ 5ml i/m biweekly as an antistressor. For pain and inflammation Tolfenamic acid (Maxxtol)3 inj. was administered @ 4mg/kg body wt. i/m at each 48 hourly. For the prevention of secondary bacterial infection Streptopenicillin inj. (Dycristicin-S)4 @ 2.5 g i/m bid. was given daily for 7 days. Feritas3 inj. @ 1ml/ 50kg b. wt. was administered for the prevention of anaemia. Vitamin B-complex with Liver extract inj. (Pepsid-C)5 @ 5ml i/m daily given for 20 days to treat the anorexia. Severely
Table:

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Animals affected (3 Cows and 12 Buffaloes)</th>
<th>Periods in days</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edematous swelling of limbs</td>
<td>All</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Wounds distal to knee and hock joint</td>
<td>All</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Cracks and Sloughing of hooves</td>
<td>2 Cow and 4 Buffaloes</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Gangrene and sloughing of tail</td>
<td>All</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Dry gangrene of ear tips</td>
<td>All</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Curling of ear tips</td>
<td>2 Buffaloes (Absent in cows)</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Rough body coat and loss of hair</td>
<td>All</td>
<td>0</td>
<td>15</td>
</tr>
</tbody>
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Note: Each + denotes 20% severity, Zero denotes complete recovery, - denotes death of the animals.

Fig.-1: Cow recovered from gangrenous syndrome.
Fig.-2: Development of crack in hoof region.
Fig.-3: Cow a surviving recovered buffalo's hind leg with sloughed hoof.
Fig.-4: A recumbent animal affected with gangrenous syndrome.
Fig.-5: Curled ear border in a buffalo affected with gangrenous syndrome.
Fig.-6: Sloughed tail and crack in legs in a buffalo.
anorectic and recumbent animal had given fluid therapy of Intalyte® @ 2 lit./day for five days to stabilize the body.


Periodic occurrence of gangrenous syndrome (Degnala disease) during 1998-1999, 2007-08 and 2011-12 in Bihar indicates about the relation between flood and occurrence of the disease. Incomplete post harvest drying and stacking of the rice straw at low lying places near canals and water channels was found closely linked with the occurrence of the disease.

Buffaloes were found more frequently affected than cattle. The recorded morbidity and mortality in buffaloes were higher than cattle. (1) revealed that skin of buffaloes lacks hair coat having relatively low capacity to conserve heat in cold weather as compared to cattle, so buffaloes suffer more than cattle. The development of oedema, necrosis and gangrene of the lower parts of the legs, tip of the tail and ear pinna might possibly be due to the low environmental temperature. (2, 3) described that the cold weather or low temperature has synergistic effect, which aggravates the condition by causing vasoconstriction in peripheral blood vessels. Similarly, (4) stated that, there is evidence of interference with blood circulation to the extremities due to freezing of the feet and lower parts of the leg and tail, when exposed to extreme cold. The gangrenous portion sloughed off, mostly hooves and some lower vertebrae of tail simulating the report of (5) and in some cases curled and necrosed border of the ears also sloughed and gave rise to ulcerated open wound formation. (6) described the sloughing of hooves due to pus formation in the coronet and pastern regions. (3, 7) also reported about the appearance of the ring on the hoof just below the coronary band and development of crack sufficiently deep to separate the hooves. Several vertebrae of tail digits of hooves sloughed off as reported by (8, 9) in Degnala disease.

Out of three cows and 12 buffaloes one cows and 4 buffaloes had severe lesion, died during the course of the treatment. Rest animals were recovered and survived with sloughed hooves, tail and extremeties of the ears with curling of ear borders, but wound were completely healed out.

REFERENCES