

SYMPTOMATIC STUDY OF HAEMORRHAGIC SEPTICAEMIA IN ELEPHANT IN MUDUMALAI WILDLIFE SANCTUARY, TAMIL NADU

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Introduction

Deaths of wild animals either in captivity or in wildlife sanctuaries have come for sharp criticism recently. In most of the cases, postmortem is carried out to determine the cause of death. Rarely are these cases detected in the early stages of infection due to many reasons. In the wild, these animals roam around in a large area, which makes it impossible to keep track of the health of each animal. In captivity, they are observed keenly but lack of proper, easy and identifiable list of symptoms prevents even trained attendants from diagnosing the disease accurately. In certain cases, symptoms and tests used have been developed on domestic animals, which are not reliable in the case of wild animals. The efficacy of tuberculin test and passive haemagglutination test (PHA) were studied in the diagnosis of tuberculosis in elephants and other animals in which it was found that the procedures and reagents adopted for intradermal test and PHA test on domestic animals are not reliable in testing wild animals (Bhat *et al.*, 1999).

Extent of infection in elephants was revealed in a study where, out of 140 elephants selected for study, 36 animals had evidence of Keratitis, corneal ulcers,

corneal opacities and some had foreign bodies in their eyes. Nine elephants had lesions in both eyes (Kodikara *et al.*, 1999). Spread of certain diseases in elephants is so fast that it does not permit long period for diagnosis. Having normal appetite and water intake, a female domesticated elephant became completely anorexic, had developed paralysis of the trunk, was unable to stand and was noticed to be blind on the sixth day and ultimately died on the ninth day. Postmortem examination was positive for rabies antigen (Wimalaratne and Kodikara, 1999). Accurate listing of easy and identifiable symptoms of diseases of wild animals is essential to provide proper and speedy treatment. In this study, an effort has been made to systematically record visible symptoms of haemorrhagic septicaemia which is a dreaded disease in elephants, caused by *Pasteurella multecida*, a Gram Negative Coccus Bacillus commonly called as Bipolar organisms.

About the Animal

The study was performed on a camp elephant (*Elephas maximus*) named Pandian in Mudumalai Wildlife Sanctuary. The age of animal was 8 years, height 172 cm, chest girth 250 cm, body weight 775 kg and front foot circumference 86 cm.

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Table
Symptoms noted

| Date | Activity | Temp. (°C) | Feeding | Eyes/ Tongue | Dung |
|------------|----------|---------------|-----------------------|--------------------------------|----------------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 21.11.1996 | Dull | 39.8 | Off feed | Discharges noticed in eyes | Semi solid |
| 22.11.1996 | Dull | 39.3 | Off feed | Discharges noticed in eyes. | Semi solid |
| 23.11.1996 | Dull | 38.5 | Partially improved | Discharges noticed in eyes | Not voided |
| 24.11.1996 | Fair | 37.3 | Partially improved | - | Coated with mucus |
| 25.11.1996 | Fair | 36.9 | Partially improved | Tongue Pale | Normal |

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along with treatment.

| Urine | Oedema progress | Treatment |
|--------|--|--|
| 7 | 8 | 9 |
| Normal | Oedema noticed in jowl region | Inj. Dextrose 540 ml x 2 bottle Inj. Ox tetracycline 100 ml Inj. Sulphadimidine 50 ml Inj. Avil 50 ml Inj. B. Complex 50 ml Hot fomentation was given over oedema. |
| Normal | Oedema noticed in jowl and throat region | Inj. Dextrose 540 ml x 2 bottle Inj. Ox tetracycline 100 ml Inj. B. Complex 50 ml Inj. Sulphadimidine 50 ml Inj. Hostacortin 40 ml Hot fomentation was given over oedema. |
| Normal | Oedema noticed in jowl and throat region | Inj. Dextrose 540 ml x 2 bottle Inj. Ox tetracycline 100 ml Inj. Lasix 40 ml Inj. B. Complex 50 ml Himalayan Batiza powder 1100 gram was given orally mixed with jaggery Hot fomentation was given over oedema Acetic acid chalk paste applied over oedema. |
| Normal | Oedema noticed in jowl, throat and neck | Inj. Dextrose 540 ml x 2 bottle Inj. Multivitamin infusion 100 ml Inj. Lasix 40 ml Inj. Hostacortin 40 ml Himalayan Batiza powder 100 gram was given orally mixed with jaggery Acetic acid chalk paste applied over oedema. |
| Normal | Oedema noticed in jowl, throat and neck. | Inj. B. Complex 50 ml Inj. Lasix 40 ml Avil 50 ml Inj. Dechlorphen 50 ml Sulphadimidine bolus 10 Nos. was given 2 times a day mixed with jaggery. Acetic Acid chalk paste applied over oedema. |

Ccnd...

| 1 | 2 | 3 | 4 | 5 | 6 |
|------------|------|------|--------------------|-------------|--------|
| 26.11.1996 | Fair | 36.8 | Partially improved | Pale eyes | Normal |
| 27.11.1996 | Fair | 36.8 | Partially improved | Pale eyes | Normal |
| 28.11.1996 | Fair | 36.6 | Partially improved | Tongue Pale | Normal |
| 29.11.1996 | Fair | 36.6 | Partially improved | Tongue Pale | Normal |
| 30.11.1996 | Fair | 36.6 | Partially improved | Tongue Pale | Normal |
| 1.12.1996 | Fair | 36.6 | Partially improved | Pale eyes | Normal |

| 7 | 8 | 9 |
|--------|--|---|
| Normal | Oedema noticed in jowl, throat and neck | Inj. Dextrose 540 ml x 2 bottle Inj. Multivitamin infusion 100 ml Inj. Dichlophen 50 ml Inj. Streptopenicillin 2.5 gm x 4 vial Sulphadimidine bolos 20 Nos. was given 2 times a day mixed with jaggary. Hot fomentation was given over oedema. |
| Normal | Oedema spreads over brisket region and on other parts of body. | Inj Dextrose 540 ml x 2 bottle Inj. Multivitamin infusion 100 ml Inj. Ox tetracycline 100 ml Inj. Avil 50 ml Himalayan Batiza powder 100 gm was given orally mixed with jaggary. Hot fomentation was given over oedema. |
| Normal | Oedema noticed in jowl, throat, neck and brisket region. | Inj. B. Complex 50 ml Inj. Ox tetracycline 100 ml Inj. Avil 50 ml Inj. Lasix 40 ml Acetic acid chalk paste applied over oedema. |
| Normal | Oedema noticed in the jowl, throat, neck and brisket region. | Inj. Lasix 40 ml Inj. Hostacortin 40 ml Himalayan Batiza powder 100 gram was given orally mixed with Ragi food. Acetic acid chalk paste applied over oedema. |
| Normal | Oedema noticed in the neck, throat brisket and abdomen. | Inj. Ox tetracycline 50 ml Inj. Dichlophen 50 ml Inj. B. Complex 30 ml Inj. Lasix 40 ml Acetic acid chalk paste applied over oedema. |
| Normal | Oedema noticed in the neck, throat brisket and abdomen | Inj. Ox tetracycline 50 ml Inj. Lasix 40 ml Inj. B. Complex 50 ml Inj. Dichlophen 50 ml Inj. dialofenac Sodium Magsulph Glycerin paste applied over oedema. |

Contd...

| 1 | 2 | 3 | 4 | 5 | 6 |
|-----------|--------|------|--------------------|-----------|--------|
| 2.12.1996 | Fair | 36.7 | Partially improved | Pale eyes | Normal |
| 3.12.1996 | Fair | 36.8 | Partially improved | Pale eyes | Normal |
| 4.12.1996 | Fair | 36.8 | Partially improved | Pale eyes | Normal |
| 5.12.1996 | Fair | 36.7 | Partially improved | Pale eyes | Normal |
| 6.12.1996 | Normal | 36.7 | Partially improved | Pale eyes | Normal |
| 7.12.1996 | Fair | 36.7 | Partially improved | Pale eyes | Normal |

| 7 | 8 | 9 |
|--------|--|--|
| Normal | Oedema noticed in the neck, throat brisket & under abdomen | Inj. Lasix 40 ml Inj. Ox tetracycline 50 ml Inj. Esgipytin 40 ml Inj. Sulpha 50 ml Magsulph Glycerin paste applied over oedema. |
| Normal | Oedema noticed in the neck, throat brisket and abdomen. | Inj. Ox tetracycline 50 ml Inj. Lasix 40 ml Inj. Hostacortin 40 ml Inj. Esgipyrin 40 ml Sulphadimidine Bolos 20 Nos. was given 2 times a day mixed with Ragi food. Magsulph Glycerin paste applied over oedema. Hot fomentation was given over oedema. |
| Normal | Oedema noticed in neck, throat, brisket and abdomen. | Inj. Sulpha 50 ml Inj. Ox tetracycline 50 ml Inj. Avil 50 ml Inj B. Complex 50 ml Sulphadimidine bolos 20 nos. given twice/day. mixed with Ragi food. |
| Normal | Oedema noticed in the neck, throat brisket and abdomen. | Inj. Sulpha 50 ml Inj B. Complex 30 ml Inj. Ox tetracycline 50 ml Inj. Avil 30 ml Sulphadimidine Bolos 20 Nos. was given twice a day mixed with Ragi food. Magsulph Glycerin paste applied over oedema. |
| Normal | Oedema noticed in the neck, throat brisket and abdomen. | Inj. Dextrose 540 ml x 2 bottle Inj Sulpha 100 ml Inj. Ox tetracycline 100 ml Inj. B. Complex 50 ml Inj. Avil 30 ml Magsulph Glycerin paste applied over oedema. |
| Normal | Oedema spreads to Perenical cavity and oedema as on earlier day. | Inj. Dextrose 540 ml x 2 bottle Inj. Sulphadimidine 120 ml Inj. B. Complex 50 ml Inj. Sulphadimindine 50 ml Inj. Avil 30 ml Himalayan Batiza powder 100 gm was given orally mixed with Jaggary. Magsulph Glycerin paste applied over oedema. |

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| 1 | 2 | 3 | 4 | 5 | 6 |
|------------|------|------|--------------------|--------------------------------|--------|
| 8.12.1996 | Dull | 36.9 | Partially improved | Pale eyes | Normal |
| 9.12.1996 | Dull | 36.9 | Partially improved | Pale eyes | Normal |
| 10.12.1996 | Dull | 36.9 | Partially improved | Congested eyes | Normal |
| 11.12.1996 | Dull | 36.8 | Unsatisfactory | Pale tongue and congested eyes | Normal |
| 12.12.1996 | Dull | 36.8 | Unsatisfactory | Pale tongue & congested eyes | Normal |

| 7 | 8 | 9 |
|--------------|--|--|
| Straw yellow | Salivation noticed in mouth and oedema as on earlier day. | Inj. Dextrose 540 ml x 2 bottle Inj. Sulphadimidine 120 ml Inj. B. Complex 50 ml Magsulph Glycerin paste applied over oedema Sulphadimidine bolos 20 nos. given twice/day. Specimens of oedema fluid, blood and fluid smear and raw blood were taken for lab examination. |
| Straw yellow | Salivation noticed in mouth and oedema as on earlier day. | Himalayan Batiza powder 100 gram was given orally mixed with jaggary. Sulphadimidine bolos 20 Nos. was given orally mixed with jaggary 2 times a day. Magsulph Glycerin paste applied over oedema Examination confirmed that bipolar staining organisms are present. |
| Straw yellow | Salivation noticed in mouth. oedema noticed in neck throat, brisket, abdomen and perenical region. | Inj. Dextrose 540 ml x 3 bottles Inj. Multivitamin 100 ml Inj. Ox tetracycline 100 ml Evening : Inj. Dextrose 540 ml x 2 bottles Inj. Sodium bicarbonate 100 ml Entroflaxin 50 ml Magsulph Glycerin paste applied over oedema. |
| Straw yellow | Discharge in trunk. Salivation in mouth. 20% oedema subsided. | Inj. Dextrose 540 ml x 2 bottles Inj. Gentamycin 120 ml Entroflaxin 50 ml Inj. B. Complex 50 ml Inj. Ox tetracycline 50 ml Entrofloxin 50 ml Magsulph Glycerin paste applied over oedema. |
| Straw yellow | Discharge in trunk and salivation in mouth. Oedema noticed in neck, throat, brisket, abdomen and perencial region. About 40% oedema subsided. | Inj. Dextros 540 ml x 3 bottles Inj. Sodium bicarbonate 200 ml Entroflaxin 50 ml Inj. Hostacortin 40 ml Sulphadimidine bolos 20 Nos. was given orally 2 times a day. Magsulph Glycerin paste applied over oedema. |

Contd...

| 1 | 2 | 3 | 4 | 5 | 6 |
|------------|----------------------|------|----------------|-------------------------------------|---------------------------|
| 13.12.1996 | Dull | 36.8 | Unsatisfactory | Congested eyes & swelling of tongue | Normal |
| 14.12.96 | Weak and debilitated | 36.8 | Off feed | Eyes congested. | Normal, hard mucus coated |
| 15.12.96 | Weak and debilitated | 36 | Off feed | Congested eyes swelling tongue. | Not voided |
| 19.12.1996 | | | | | |

The animal stopped taking food on 20.11.1996 evening when an effort was made to start close observation of the animal. Swelling was noticed in the jowl region. Since water dropsy is very common in elephants, it was treated for that condition only. Later on in the process, diagnosis confirmed the case of haemorrhagic septicaemia. Only then was it given treatment prescribed for the

disease. Keen observation was made of the symptoms which are noted in Table 1 along with the treatment.

Discussion

Oedema caused by haemorrhagic septicaemia spreads systematically; first noticed on jowl region it spreads to throat, neck, brisket, abdomen, perineal region

| 7 | 8 | 9 |
|-----------------------------|--|---|
| Straw yellow, less quantity | Dicharge in trunk & salivation in mouth noticed. Oedema noticed in the neck, throat, brisket, under abdomen and perenical region. About 40% oedema subsided. | Inj. Dextrose 540 ml x 2 bottles Inj. Sulphadimidine 100 ml Entroflaxin 50 ml Inj. Avil 50 ml Evening : Inj. Dextrose 540 ml x 2 bottles Multivitamin infusion 100 ml Sulphadimidine bolos 20 Nos. was given orally 2 times a day. Magsulph Glycerin paste was applied over oedema. |
| Straw yellow less quantity | Salivation in mouth. Swelling in tongue. Trunk touched ground while standing and discharge noticed. Unable to walk due to swelling in fore limb. Oedema as earlier day. Inability to lie down noticed due to swelling all over the body. | Inj. Dextrose 540 ml x 2 bottles Inj. Sulphadimidine 100 ml Entroflaxin 50 ml Inj. Ox tetracycline 50 ml Evening : Inj. Dextrose 540 ml x 2 bottles Inj. Sodium bicarbonate 100 ml Magsulph Glycerin paste applied over oedema. Inj. Enrofloxacin Above 50% oedema subsided. Dyspnea present in respiration. |
| Straw yellow | Severe dysphasia in respiration. Salivation in mouth. Died at 12:10 PM. Postmortem conducted. | Inj. Dextrose 540 ml x 3 bottles Inj. Betnesol 30 ml Multivitamin infusion 100 ml Inj. Avil 50 ml Entroflaxin 50 ml Inj. Oxytetracycline 100 ml. Presence of bipolar staining organisms was confirmed in laboratory test. |

and finally to entire body. Initial symptoms may be total inactivity, high temperature, off feed condition, discharge from eyes, semisolid dung while urine remains normal. Oedema spreads up to jowl, throat and neck region. Comparatively advanced stage (may be after 7 days), oedema advanced to brisket region. This advancement was in spite of suppression of other symptoms due to treatments given. Advanced stage

symptoms may include discharge in trunk, salivation in mouth, spread of oedema under abdominal and perenical regions, swelling of tongue, elongation of trunk to the extent that it touches ground while standing. Presence of dysphasia in respiration may be the symptom of last stage. In spite of treatment given prescribed for haemorrhagic septicaemia, the life of elephant Pandian could not be saved which

raises questions whether there are chances of some other diseases occurring in Asian elephants in our sanctuaries and national parks, which require systematic studies. A fatal haemorrhagic disease was identified in 10 young Asian (*Elephas maximus*) and African (*Loxodonta africana*) elephants at zoos in the USA between 1983 and 1997. In the affected animals, there was ultra

structural evidence for herpes viruses-like particles in endothelial cells of the heart, liver and tongue. Consensus primer polymerase chain reaction combined with sequencing yielded molecular evidence that confirmed the presence of two novel but related herpes viruses associated with the disease, one in Asian elephants and another in African elephants (Richman *et al.*, 1999).

SUMMARY

Symptoms of haemorrhagic septicaemia, a dreaded disease in elephant is recorded in this study which reveals systematic spread of Oedema from jowl to throat, neck, brisket, abdomen and perineal regions. It also records the changes in character / colour of dung, urine, eye, tongue, trunk, body temperature, feeding habit and body condition along with treatment given to cure the disease.

मुडुमलै वन्यप्राणि अभयारण्य, तमिलनाडु में हाथियों के रक्तस्रावी रोगाणुरक्तता का लक्षणपरक अध्ययन
वी.एन. सिंह

सारांश

इस अध्ययन में हाथियों के भयानक रोग रक्तस्रावी रोगाणुरक्तता के लक्षण बताए गए हैं जिससे पता चलता है कि सूजन दाढ़ (कपोल) से आरम्भ होकर गले, गर्दन, सीने के मांस, उदर और चिरस्थायी भागों तक विधिवत् बढ़ती चली जाती है। इसमें लीद, पेशाब, आंख, जीभ, सूण्ड, शरीर-तापमान, भोजन करने की आदतों और शरीर की दशा में होने वाले लक्षण/रंग के परिवर्तन बताए गए हैं और उनके साथ रोग को ठीक करने के उपचार भी सुझाए गए हैं।

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Oedema in jowl and
throat region - 22.11.1996



Swelling in tongue -
28.11.1996



Oedema in abdominal and
perineal region - 30.11.1996



Breeding Openbills,
Cormorants and
Night herons on
Barringtonia trees



Breeding of Pelicans
in Nelapattu Tank



Pelican chick in the nest

