



A Fifteen Year Review of Treatment Modalities and Outcomes Utilizing Anti-Tuberculosis Antibiotics in Elephants at three facilities.

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- Summary of Tb Culture Positive elephant treatments and outcomes
- Summary of Prophylactic elephant treatment and outcomes
- Recommendations for future treatment options



Tb Culture Positive elephant treatments and outcomes

1. Treated INH, PZA one year, culture positive again one year after treatment – treated INH, PZA culture negative last seven years – STAT-PAK negative
2. Treated INH, PZA two years, culture negative for last six years – STAT-PAK + MAPIA+ but indication treatment was effective
3. Treated INH, PZA, Enrofloxacin 1 ½ years culture negative last four years, STAT-PAK negative



Tb Culture Positive elephant treatments and outcomes

4. Treated INH, PZA, Enrofloxacin, 1 ½ years
culture negative last four years, STAT-PAK negative
5. Treated INH, PZA 1 year
culture negative last two years, STAT-PAK + MAPIA +
6. Treated INH, PZA 1 ½ years
Culture negative last 10 years, STAT-PAK + MAPIA +



Tb Culture Positive elephant treatments and outcomes

7. Treated – culture was INH resistant PZA, RIF, ETH 1 ½ years, culture neg. 9 yrs, STAT-PAK + MAPIA +
8. Treated INH, PZA, RIF 1 year, culture negative five years, necropsy with extensive sampling, of lung nodules and lymph nodes. All negative, except one small granuloma yielded a + culture



Summary of TB culture positive treatments and outcomes

1. Elephants treated with INH and at least one other anti-tuberculosis drug for one year, indicate treatment was successful in converting most elephants to a latent phase of disease or possible cure.
2. Treatment length of one year (or less?) in culture positive elephants appears to result in reducing the response on the STAT-PAK/MAPIA test for most elephants.
3. Experience indicates three time weekly treatment is effective and reduces incidence of side-effects.



Prophylactic elephant treatment and outcomes

1. Treatment with INH, PZA 1 year, STAT-PAK+ MAPIA + (2 yrs after treatment, MAPIA indicates treatment was effective)
2. Treatment with INH, PZA, RIF 1 year, STAT-PAK – (10 yrs after treatment)
3. Treatment with INH, PZA, RIF 1 year, STAT-PAK + MAPIA + (10 yrs after treatment)
4. Treatment with INH,PZA, RIF 1 year, STAT-PAK + MAPIA – 10 yrs after treatment indicates successful treatment?)



Prophylactic elephant treatment and outcomes

5. Treatment with INH, PZA, RIF 1 year, STAT-PAK –
(10 yrs after treatment)
 - Treatment INH, PZA 1 year, STAT-PAK -
(10 yrs after treatment)
7. Treatment INH, PZA, RIF 1 year, STAT-PAK –
(11 yrs after treatment)
8. Treatment INH 1 year, STAT-PAK –
(10 yrs after treatment)
9. Treatment INH 1 year, STAT-PAK –
(10 yrs after treatment)



Summary of Prophylactic elephant treatment and outcomes

1. Prophylactic treatment with INH alone could be recommended as effective treatment in elephants.
2. Prophylactic treatment with two or more anti-Tb drugs are at least as effective as INH alone, but appear to raise risk of side effects.
3. Prophylactic treatment has some pitfalls, as moderate to severe side-effects can occur in a number elephants undergoing treatment.
4. Prophylactic treatment can be effectively accomplished in traveling elephants.





Recommendations for Treatment in Culture Positive elephants

1. If culture is not INH resistant

A. treatment with two anti-Tb drugs –

- a. Use INH and PZA for oral or rectal therapy
- b. 5 days per week for 2 months
- c. Three times per week for 10 months

2. INH resistant sensitivity culture result

A. Use three anti-Tb drugs (may include INH)

- a. If elephant is not compliant with oral medications this may be a challenge to accomplish.



Recommendations for Prophylactic treatment

1. Weigh risk factors for the elephant to be treated:
 - A. Significant exposure to other culture positive elephants
 - B. Age and health status of elephant to be treated
 - C. Response to ancillary tests should be weighted over time, do not make judgment based on one point in time.
 - C. If truly latent infection, treatment with anti-Tb drugs not likely to be as effective. However, INH is described as most effective drug in latent infections.
2. Suggest we recommend INH orally or rectally three times per week for six months.



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