

The Heterogeneity of measles epidemiology in India:

Comparing outbreaks from two states with different vaccine coverage
The Indian FETP measles-working group

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Background

- Measles is still a problem in many states in India in terms of morbidity and mortality
- Measles vaccine coverage varies in India
- There were three outbreaks in 2006
 - One in Himachal Pradesh (Northern India)
 - Two in West Bengal (Eastern India)
- Compare the outbreaks in terms of demography, vaccine coverage and vaccine efficacy estimation.
- Suggest evidence based strategy for measles control

Methods

In all the three situations

- Used WHO case definition of Measles
- Searched villages door-to-door
- Interviewed mothers for vaccination status
- Collected sera for IgM serology
- Cohort study to estimate
 - Attack rate
 - Case fatality
 - Median age of cases
 - Vaccine efficacy

Himachal Pradesh

- The outbreak was serologically confirmed
- Coverage for immunization > 90%
- 51 Cases (no deaths) - Attack rate was 6%
- Median age was 10 years (range 6 - 15 years)
- Vaccine efficacy - 84% (95% CI 74 - 91)
- Vitamin A given during outbreak

West Bengal

- No. of outbreaks 2
- Coverage for immunization 75%
- 66 Cases (2 deaths) - Attack rate was 10% - CFR 3%
- Median age was 5 years (range 10 months - 16 years)
- Vaccine efficacy - 81% (95% CI 67 - 89)
- Vitamin A given only during 1 outbreak.

Comparison

- Vaccine efficacy similar ($P > 0.05$)
- Coverage was more in HP
 - Median age was higher
 - Attack rate lower
 - No death
- Coverage was poor in WB
 - Median age was lower
 - Attack rate higher
 - Case fatality 3%

Lessons learnt

- Vaccine efficacy similar
 - Vaccination procedure/logistics not an issue
- Vaccine coverage different
 - Seem to have an impact on the number and severity of cases and needs to be addressed
- Further analysis of earlier outbreaks
 - Uttaranchal
 - Tamil Nadu

Recommendation

- Low coverage area
 - Concentrate on improving the coverage for measles vaccination
 - Vitamin A supplementation for mortality reduction
- High coverage area
 - Second opportunity for measles vaccination
 - Vitamin A supplementation for mortality reduction

**Thank yo very much
for your attention.**