

**Epidemiology & Management of
Chandipura Encephalitis
Year 2014**

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Epidemiology & Management of Chandipura Encephalitis

It is a viral infection first outbreak of febrile illness was reported in 1965 in Chandipura Village of Nagpur district of Maharashtra state. Thereafter, few outbreaks occurred in Andhra Pradesh, Maharashtra & Gujarat. This virus belongs to family Rhabdoviridae, genus Vesiculovirus. It is characterized by bullet shaped particles, 150-165 nm long, 50-60 nm wide, showing distinct surface projections 9-11 nm in size & a stain-filled canal at the base of the virus particles.

(1) Epidemiology:

- Distribution predominantly rural.
- Distribution is spotty, without clustering.
- Pediatric age group from 9 months to 14 years affected.
- Male: Female ratio is 1.077.
- Neurological sequelae rare in recovered children.
- Vector is Sandflies –Phlebotomus species.

(2) Clinical features:

- High grade fever of short duration
- Vomiting, diarrhea
- Headache
- Altered sensorium
- Generalized convulsions
- Decerebrate posture, leading to Grade IV coma within several hours
- Acute encephalitis / encephalopathy
- Death within 48-72 hours of onset of symptoms

(3) Diagnosis:

- Samples to be collected: Serum sample & CSF.
- Samples to be sent to NIV –Pune.
- Serological test: IgM (after 4 days of illness) & IgG ELISA for primary detection.
- Antigen detection: ELISA, IFA.
- Confirmatory test - Genome detection of PCR-G gene by RT-PCR.
- Virus isolation: Cell culture, infant mice.

(4) Management:

4.1 General management:

- A) Airway, breathing, circulation.
- B) Oxygen therapy, mechanical ventilation when required.
- C) Fluid & electrolyte balance.
- D) Management of hyperpyrexia.
 - Paracetamol- oral or per-rectal: 15 mg/kg/dose 3-4 times a day
 - Diclofenac- per rectal: 3 mg/kg 2-3 times a day.

4.2 Anti-viral therapy: no specific anti-viral agent available.

4.3 Management of raised intracranial pressure.

- A) Head elevation (anti-trendelenburg position-15-30 degree)
- B) Mannitol: loading dose of 5 ml/kg followed by 2 ml/kg every 8 hourly for 3-5 days.
- C) Hyperventilation.
- D) Surgical decompression in impending uncal herniation & refractory ICP to medical management.

4.4 Management of seizures

Diazepam: 0.3 – 0.5 mg/kg IV for acute seizure control, monitoring respiration, given slowly.

Phenytoin: 15 mg/kg loading dose IV very slowly with cardiac monitoring followed by 5 mg/kg maintenance dose.

4.5 Nutrition: adequate nutrition by RT feeding after seizure control.

4.6 Prevention:

A) Secondary prevention: prevention of secondary bacterial infections

For pneumonia – 1st line antibiotic: Coamoxy-clav + Ceftriaxone / Amikacin

Coamoxy-clav: 30 mg/kg/dose IV every 8 hourly.

Ceftriaxone: 100 mg/kg/day IV in 2 divided doses.

Amikacin: 15 mg/kg/day IV in 3 divided doses.

2nd line antibiotic: Piperacillin-Tazobactam & Levofloxacin

Piperacillin-Tazobactam: 200 mg/kg IV in 3 divided doses.

Levofloxacin: 10 mg/kg/ day IV once a day.

Prevention of bed-sores – frequent change of posture & water bed.

B) Primary prevention:

Prevention of bite by protective clothing, repellants & nets.

Vector control.

(5) Guidelines for epidemic Investigation of Chandipura Encephalitis

5.1 Verification of diagnosis:

- Case definition

Suspected case: A case of high grade fever of <3 -4 day duration in any age group (specifically in children) with vomiting, headache, altered sensorium, generalized convulsion or comatose state.

Probable case:- a patient with sudden onset of high grade fever followed by CNS involvement of < 3 days duration in any age group with vomiting, headache, altered sensorium, generalized convulsion or comatose state singly or in combination & negative test result for malaria & other common cause of illness.

Confirmed case: as above all plus one or more of following lab results

1. Presence of viral RNA,
2. IgM antibodies against the CHP virus in blood/CSF
3. Seroconversion in convalescent blood/CSF sample.
4. Virus isolation.

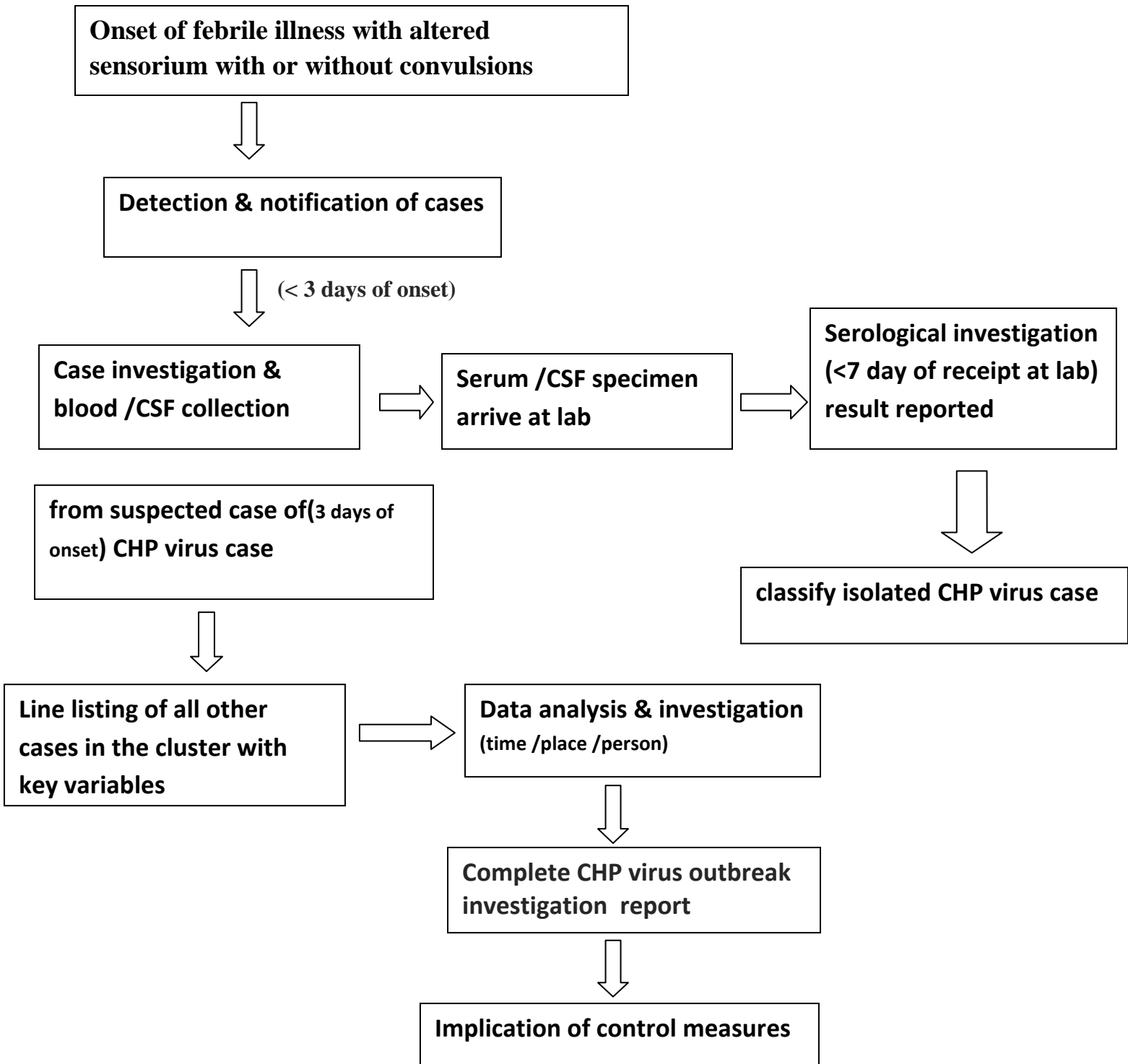
5.2 Confirmation of existence of epidemic:

A single case or clustering of cases of probable CHP virus in any age group .

5.3 Defining the population at risk.

- Children age between 0-14 years
- Male working on fields
- Debilitate persons having chronic illness
- Old age persons.

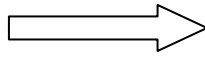
The process of AES surveillance is described in the diagram below



Management of CHP cases at PHC level.

Danger signs

- High grade fever less than 3 days duration
- with anyone of following symptoms
 - Lethargy
 - Unconsciousness
 - Convulsions
 - Persistent Weakness



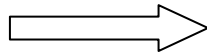
Preliminary Rx

- Nil orally
- IV fluids
- Convulsions :anticonvulsant
- fever: tap water sponging
- prone /semiprone position

Referral to nearest FRU/CHC

Further danger sign

- Shock
- Hypotension
- Ventilator need



Treatment

IV fluids
supportive Treatment



Referral to tertiary hospital.

Line listing of cases

- Search for further epidemiologically linked cases in near by community or area & finding out cluster of cases.

Identify sandfly breeding places.:

Breeding sites

- In holes & crevices in wall
- Holes in trees
- Dark rooms
- Stable & store rooms

Screen 50 yards of breeding places.

CONTROL OF SANDFLY

1. INSECTICIDES:

A single application of 1-2 gm/m² of DDT or 0.25gm/m² of Lindane has found effective in control of sandfly. Spraying should be done in human dwelling, cattle shades and other places. Dusting should be done by 5 % malathion in house and surrounding places.

2. SANITATION:

Removal of vegetations within 50 yards of human dwellings and filling of cracks and crevices. Keep air and ventilation in houses.

3 ENVIRONMENTAL CONTROL

- Storing garbage, kitchen waste and other refuse in bins with tight lids.
- Disposal of refuse by incineration, composting or sanitary land fill.
- Provision of sanitary latrines.
- Stopping open air defecation.

4 FLY PAPER

- These papers can be easily made by mixing 2 lbs. of resin and one point of castor oil.
- The adhesive mixture can also be applied to strips of wire and hung up in places where flies abound.

5 PERSONAL PROTECTION AGAINST FLIES

6 HEALTH EDUCATION