

# ENCEPHALITIS, ACUTE VIRAL

(See also **ENCEPHALITIS, Arboviral**.)

1. **Agent:** Many viruses can produce this syndrome, including mumps, varicella zoster, herpes simplex I and II, measles, rabies, influenza (A and B) and a variety of enteroviruses. Rarely, live virus vaccines may result in acute encephalitis. A specific etiologic agent may be difficult to identify.
2. **Identification:** Clinical signs of encephalitis can occur as a primary manifestation, as an associated illness, or as a complication.
  - a. **Symptoms:** Variable; headache, high fever, meningeal signs, altered level of consciousness, spasticity, convulsions, and tremors.
  - b. **Differential Diagnosis:** Arthropod-borne encephalitides, post-infectious encephalomyelitis, other causes of inflammatory encephalopathy.
  - c. **Diagnosis:** Presence of viral-specific IgM antibodies in cerebrospinal fluid or acute-phase serum suggests recent infection. A 4-fold rise in viral-specific antibodies in paired acute and convalescent sera by neutralization, complement fixation, indirect fluorescent antibody, ELISA, or other serologic tests. Isolation of the virus from brain tissue, or, rarely, from blood or CSF, or demonstration of viral antigen in brain tissue by immunofluorescence. Viral-specific PCR testing of CSF.

## REPORTING PROCEDURES

1. Reportable. (Title 17, Section 2500, *California Code of Regulations*).
2. **Report Form: ENCEPHALITIS CASE HISTORY FORM (acd-enceph, 4/02 fillable).**
3. **Epidemiologic and Clinical Data:**
  - a. Other illnesses 3 to 4 weeks prior to onset.
  - b. Immunization 3 to 4 weeks prior to onset; dates, types, and sources.
  - c. Results of the first spinal tap (CSF): note total WBC with differential, total RBC, and total protein and glucose.
  - d. Results of any viral studies performed (both serum and CSF).

- e. Results of other appropriate clinical studies (e.g., Head CT, MRI, EEG).

## CONTROL OF CASE, CONTACTS & CARRIERS

Follow-up depends on etiology, if known.

**CASE:** Isolation: Depends on communicability of etiologic agent. If unknown or enteroviral etiology is suspected, standard isolation is recommended. If respiratory spread virus is suspected then airborne isolation should be followed.

**CONTACTS:** No restrictions.

**CARRIERS:** Not applicable.

## PREVENTION-EDUCATION

Immunization against childhood disease. Use of good hygiene, especially hand washing.

## DIAGNOSTIC PROCEDURES

Clinical and epidemiologic history required to aid the laboratory in test selection.

1. **Serology:** Paired sera required.

**Container:** Serum separator tube (SST).

**Test Requisition and Report Form H-3021 or online request if electronically linked to the Public Health Laboratory.**

**Test Requested:** Encephalitis panel and/or enteroviral serology.

**Material:** Whole clotted blood, CSF.

**Amount:** 8-10 ml of blood, 1-2 ml CSF.

**Storage:** Refrigerate immediately.

**Remarks:** Collect first (acute) blood specimen as soon as possible. Collect second (convalescent) blood approximately 2 weeks after the first. Send each specimen to Public Health Laboratory as it is collected.

2. **Culture:** Depends on stage of illness. Consult the Public Health Laboratory, Virology Section.

**Container:** Sterile, 30 ml. wide-mouth screw-cap bottle, viral culturette, sterile test tube.

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**Laboratory Form:** Test Requisition and Report Form H-3021 or online request if electronically linked to the Public Health Laboratory.

**Examination Requested:** Viral Culture.

**Material:** 2-3 grams of stool (no preservative) required; NP swabs (using viral transport media) and CSF recommended.

**Storage:** Refrigerate and deliver to Public Health Laboratory within 48 hours of collection, or freeze immediately after collection at  $-70^{\circ}\text{F}$  and keep frozen until delivery.

**Remarks:** Specimens for isolation attempts must be collected as soon as possible after the onset of symptoms.