COUNTY OF SAN DIEGO
Department of Health Services
P.O. Box 85222, San Diego, CA 92186-5222

# PHYSICIANS' BULLETIN

Robert K. Ross, M.D., Health Officer | July 1997 | No. 411

## Vector-Borne Diseases and Multiple Bee Stings

Seasonal warm weather has increased the likelihood that physicians may see patients with arthropod and rodent-related illnesses. Although infrequent, illnesses such as rat bite fever, encephalitis, and malaria should be considered when diagnosing vector-borne diseases.

The following diseases are of particular concern in San Diego County and should be considered when seeing patients who have a recent history of exposure to mosquitoes, other arthropods or rodents.

### *Encephalitis*

**Symptoms** – Mild cases of this mosquito-borne disease occur as viral meningitis. Severe infections usually have acute onset of headache, high fever, meningeal signs, stupor, disorientation, coma, tremors, occasionally convulsions in infants, coma, and spastic, but rarely flaccid, paralysis.

**Laboratory** – Physicians are strongly encouraged to submit blood specimens on suspect cases of meningoencephalitis. If arboviral encephalitis is part of the differential diagnosis, the acute phase specimen should be submitted for testing without delay in order to detect IgM antibodies to St. Louis encephalitis (SLE) or western equine encephalitis (WEE). The initial serum usually has IgM antibodies that can be readily identified by the indirect immunofluorescent antibody (IFA) test.

Please submit 6-8 ml. whole clotted blood, or 3-4 ml. serum from each phase to the County of San Diego Public Health Laboratory, 3851 Rosecrans St., P.O. Box 85222, San Diego, CA 92186-5222. Specimens should be accompanied by a Public Health Laboratory Form 22.

**Disease Occurrence:** No cases of arboviral encephalitis in humans were reported during 1996 or during the first five months of 1997.

### *Malaria*

**Symptoms** – Symptoms of this mosquito-borne disease include:

- ❑ Shaking chills
- ❑ Sweats
- ❑ High fever
- ❑ Headache

Because of the cyclic nature of this disease, persons with mild symptoms should seek medical attention when symptoms intensify and the parasite, which is not evident in the blood during mild symptoms, is once again present.

**Laboratory** – If malaria is suspected, a thick and thin smear of peripheral blood should be obtained and examined for the presence of malaria parasites. The blood should be collected prior to therapy.

Optimal results are obtained with blood collected during spikes of fever and with smears prepared from freshly collected uncoagulated blood. The smears and the blood (in purple top tubes with EDTA anticoagulant) may be delivered or sent to the Public Health Laboratory.

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**Disease Occurrence:** There were no locally acquired cases of malaria during 1996 or the first five months of 1997. However, there were 13 travel/military-related cases during 1996, and 6 during the first five months of 1997.

## *Hantavirus*

Rodents are the primary reservoir hosts of recognized hantaviruses. Infected rodents shed virus in their saliva, urine and feces. Infection may occur when infective saliva or excreta are inhaled as aerosols; or when dried or fresh materials contaminated by rodent excreta are disturbed or directly introduced into broken skin, or, possibly ingested in contaminated food or water. Infection has also occurred after a bite of an infected rodent.

**Symptoms** – Initial symptoms are similar to less severe viral infections, with most persons experiencing:

- ❑ Fever
- ❑ Chills
- ❑ Myalgias

Other symptoms include:

- ❑ Dyspnea
- ❑ Headache
- ❑ Nausea
- ❑ Vomiting
- ❑ Diarrhea
- ❑ Malaise
- ❑ Nonproductive cough

**Laboratory** – At present only the State Viral and Rickettsial Disease Laboratory (VRDL) can test for the viral agent which causes hantavirus pulmonary syndrome (HPS). Some commercial laboratories offer a test which can detect hemorrhagic fever with renal syndrome (HFRS), but this test is not recommended by VRDL.

An acute blood sample (5-10 ml in a red top tube) and a case report questionnaire should be submitted to the Public Health Laboratory which will then forward the specimen to the State. A convalescent serology should be collected at 10 to 14 days as well. Specimens should be delivered to the Public Health Laboratory. For case report questionnaires and delivery instructions, call 692-8500.

**Disease Occurrence:** Five wild mice from three sites in the county were confirmed positive for the hantavirus in 1996. No mice tested positive during the first five months of 1997. No human cases were reported during the above time periods.

## *Lyme Disease*

**Symptoms** – Initial symptoms of this tick-borne disease may include a skin lesion/rash, frequently, but not always, annular erythema migrans (EM), accompanied by flu-like symptoms, fever and muscle aches. Some individuals exhibit swollen lymph glands. Most persons treated with appropriate antibiotics at this stage will have a quick recovery. Lack of treatment may result in long-term complications including disorders of the heart or nervous system, and arthritis.

**Laboratory** – Serological tests are widely available, however, their sensitivity are unclear, and they are not standardized. The patient should be treated based on clinical observations.

The Western Black Legged tick (*Ixodes pacificus*) is the primary vector for Lyme disease in California. Ticks may be saved and sent to County Vector Control for identification. Call 694-2888 for directions.

**Disease Occurrence:** Five cases of Lyme disease, acquired outside the county, were reported in 1996. No cases were reported during the first five months of 1997.

## *Plague*

Plague has been documented in San Diego County in wild animals. Patients should be queried about possible exposures to fleas and/or their wild animal hosts in rural areas if symptomatology is consistent with the following.

**Symptoms** – The most common presentation in humans is lymphadenitis in nodes of the

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inguinal, axillary or cervical area. The involved nodes are swollen and tender and may suppurate. Fever is often present.

**Laboratory** – For directions on collection and submission of appropriate specimens, call the Public Health Laboratory at 692-8500.

**Disease Occurrence:** Thirteen ground squirrels from three high elevation campgrounds in the county were confirmed positive for plague in 1996. During the first five months of 1997, there were 2 presumptive positive ground squirrels found in the Palomar Mountain area. Confirmation is pending. No human cases were reported during the above time periods.

## ***Rabies***

An invariably fatal, acute viral encephalomyelitis; transmission primarily occurs through virus-laden saliva of rabid animals. Human rabies can be prevented by eliminating exposure and by receiving appropriate preexposure and post exposure prophylaxis when indicated.*

**Symptoms** – Initial symptoms include:

- ❑ Headache
- ❑ Sensory changes
- ❑ Fever
- ❑ Malaise
- ❑ Onset of apprehension

**Laboratory** – For directions on collection and submission of appropriate specimens, call the Public Health Laboratory at 692-8500.

**Disease Occurrence:** No human cases of rabies have been reported in San Diego County. During the first five month of 1997, 5 bats tested positive for rabies. In 1996, there also were 5 bats which tested positive; 26 in 1995. Since 1980, 171 positive bats have been identified out of 1,676 tested (10%). Most bats submitted for testing were found by the public and were either sick or dead.

| Animal | Last Positive Rabies Reported |
|---|---|
| Bat | 1997 |
| Skunk | Oct. 1976 (Last previous positive Oct. 1968) |
| Fox | Dec. 1994 (Last previous positive Feb. 1970) |
| Dog | June 1969 |
| Cat | Dec. 1968 |

*Call 515-6620 (fax 515-6644) for the 1997 California Compendium of Rabies Control.

## ***Hybridized (Africanized) Honey Bees (AHB)***

Hybridized honey bees have been reported in the Anza Borrego Desert in San Diego County in October 1996, as well as in Imperial and Riverside counties. AHBs can be very aggressive when provoked, and persons attacked are likely to receive many more stings, and thus, more venom, than from the more common European honey bees. Persons with a hypersensitivity to bee stings may experience an anaphylactic reaction. Consideration of immunotherapy is recommended.

Multiple bee sting incidents (15 or more stings) should be immediately reported by telephone by medical care providers, as required by law. See reporting guidelines below.

**Occurrence:** No multiple bee stings to humans attributed to AHB have been reported in San Diego County.

## ***Reporting***

Prompt reporting by telephone of illnesses and bee stinging incidents listed above is important. Please call the following.

**Weekdays: 515-6620**
Epidemiology Unit
8 a.m. to 5 p.m.

**Nights & Weekends: 565-5255**
County Communications Ctr.
(County Health Services staff person will return the call as soon as possible.)