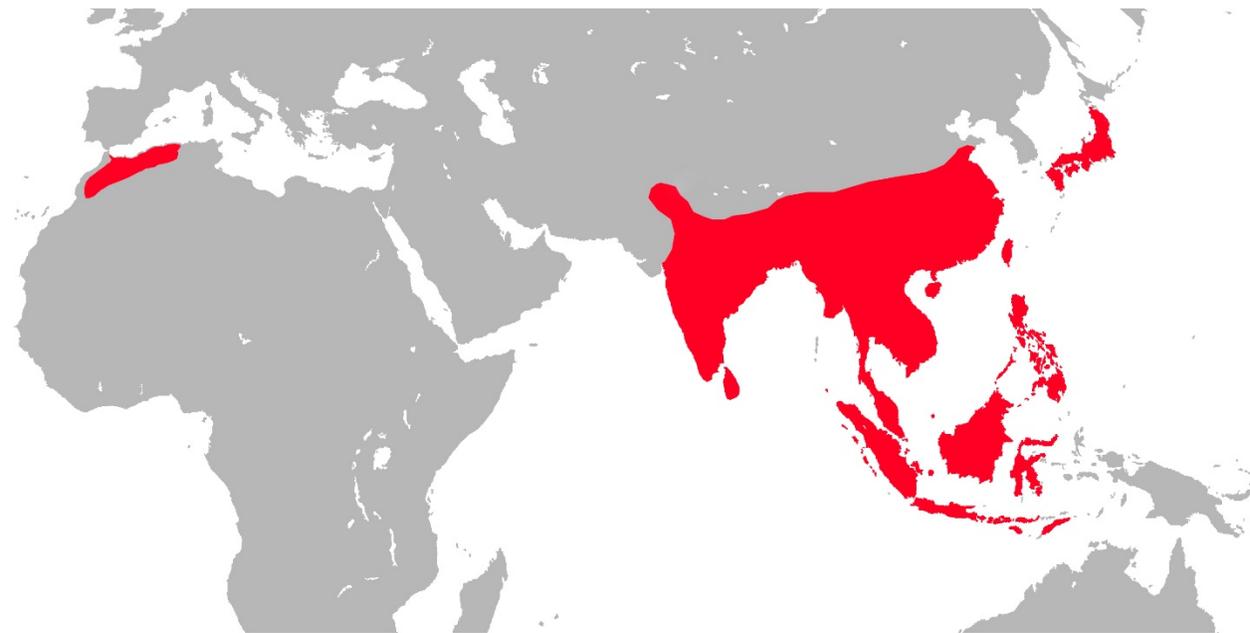


Monkey Bites - Herpes B Virus

Monkeys carry many diseases that infect humans. Exposure to monkey bites and scratches puts one at risk for herpes B virus and rabies. Rabies prophylaxis – Monkey bite victims usually need rabies post-exposure prophylaxis. Please refer to rabies chapter in this manual for more information.

Herpes B virus is a dangerous infection that occurs in Macaque monkeys. There are reports of fatal cases in humans of myelitis and hemorrhagic encephalitis caused by herpes B virus transmitted from Macaque monkeys. Persons at greatest risk for B virus infection are travelers, veterinarians, laboratory workers, and others who have close contact with Old World macaques or monkey cell cultures. Infection is typically caused by animal bites or scratches, exposure to the tissues or secretions of macaques, or mucosal contact (contact with the eyes, nose or mouth with infected body fluid or tissue). Human infection can also result from indirect contact via needlestick injury from a contaminated needle.

Macaques housed in primate facilities usually become B virus positive by the time they reach adulthood. B virus establishes latent infection in macaques and can only be transmitted during active viral shedding into mucosal surfaces. Although rare viral shedding occurs after reactivation from the latent state, most commonly in animals that have been stressed or immunosuppressed. In nature, Old World macaques are found in Central and Southeast Asia along with Barbary macaques in North Africa and Gibraltar.



Identification of the species of primate that bit a person should be made from geographic location and description of the animal, including any pictures.

Wound Management

The treating healthcare provider should assess and treat the scratch or bite as needed. Most of the time, however, the on-call epidemiologist will be learning about the exposure once the bite victim has returned from travel to a foreign country. Usually wound care will have been rendered in the country where the bite occurred. In the event that the bite occurred in the United States, or

the bite victim did not receive wound care, monkey bites tend to be puncture bites so closure of the wound with sutures is generally not recommended. The healthcare provider will decide the course of antibiotic treatment, need for debridement or other wound care measures. Ensure the bite victim is up-to-date with tetanus vaccine.

Herpes B (*Cercopithecine herpes*) prophylaxis considerations and recommendations.

Type and physical condition of the implicated animal. Only monkeys of the macaque family serve as the natural reservoir for B virus infection. No other primates carry any risk of B virus transmission unless they have had the opportunity to become infected by a macaque. Infected macaques will not ordinarily be shedding B virus. Animals with lesions consistent with B virus infection (fluid-filled blisters on the skin) and animals that are immunocompromised or stressed are more likely to be shedding virus.

2. Thoroughness and timeliness of wound cleansing procedure. Wounds that have been cleansed within 5 minutes of exposure and that have been cleansed for at least 15 full minutes are less likely to lead to B virus infection. Delay in cleansing or inadequate cleansing of the wound increases the risk of infection.

3. Nature of the wound. Bites or scratches that penetrate the skin, and particularly deep puncture wounds, are higher risk than wounds that are superficial and more easily cleansed. Wounds to the head, neck, or torso provide rapid access to the CNS and should be considered higher risk. Prophylaxis is recommended for this type of wound regardless of its severity. Superficial wounds to the extremities are less likely to lead to fatal disease, and antiviral treatment is considered less urgent in such exposures.

4. Exposure to materials that have come into contact with macaques. Needlesticks with syringes that have come into contact with the CNS, eyelids, or mucosa of macaques carry a high risk of infection. Accidental punctures from needles exposed to the peripheral blood of macaques are considered relatively low risk. Scratches resulting from contact with possibly contaminated objects, such as animal cages, carry a lower risk for infection. It should be stressed, however, that in none of these potential exposures, can the risk of infection be considered zero. The decision to treat with antivirals should be made at the physician's discretion, with consideration of the patient's wishes and concerns.

Treatment should be considered in the following circumstances:

1. Mucosal splash that has been inadequately cleaned.
2. Laceration (loss of skin integrity) that has been adequately cleaned.
3. Needlestick involving blood from an ill or immunocompromised macaque.
4. Puncture or laceration occurring after exposure to (a) objects contaminated with body fluid (other than that from a lesion) or (b) a possibly infected cell culture.

Treatment is not recommended in the following circumstances:

1. Skin exposure in which the skin remains intact.
2. Exposure associated with non-macaque species of non-human primates, unless they were in a situation where they could have been infected by a macaque.

Antiviral Therapy

Recommended dosages for specific antivirals are as follows.

1. Prophylaxis for exposure to B virus

- Valacyclovir—1g by mouth every 8 hours for 14 days, or

- Acyclovir—800 mg by mouth 5 times daily for 14 days

If the bite victim develops any neurological symptoms in the next few days to five weeks after the bite, she should be referred to a higher level of care for further evaluation and treatment.

2. Treatment of B virus infection

With no CNS symptoms

- Acyclovir—12.5–15 mg/kg intravenously every 8 hours, or
- Ganciclovir—5 mg/kg intravenously every 12 hours.

With CNS symptoms

- Ganciclovir—5 mg/kg intravenously every 12 hours.