

Connecticut Epidemiologist



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RABIES PREVENTION IN CONNECTICUT

Although rabies rarely affects humans in the United States, animal bites are extremely common. It is estimated that over one million people in this country are bitten by animals each year. Approximately 30,000 of these persons receive post-exposure prophylaxis (1). Post-exposure rabies prophylaxis includes both human diploid cell rabies vaccine (HDCV) and human rabies immune globulin (RIG). Figure 1 summarizes schedules for pre- and post-exposure prophylaxis. HDCV and RIG are both safe and effective. However, the treatment is expensive (about \$400-\$500 to treat one adult). As with all medications, adverse reactions can occur. The need for treatment should be carefully evaluated for each case.

NEW DISTRIBUTION SYSTEM

The Epidemiology Section of the Department of Health Services has provided rabies globulin and vaccine at no cost to the patient for many years. Human diploid vaccine produced by Merieux Institute in France was licensed for use in the United States

in June, 1980. This vaccine was marketed on a controlled basis in order to insure that vaccine was available to those at highest risk. In Connecticut, it was available only through the Department of Health Services. However, a second vaccine, manufactured by Wyeth Laboratories, has recently been licensed in this country, and ample amounts of both vaccines are available for pre- and post-exposure therapy.

Therefore, the Department of Health Services, with the cooperation of the Connecticut Hospital Association Pharmacy Directors' Conference, has developed a new system for distribution of rabies vaccine and globulin which will be implemented January 1, 1983. BIOLOGICS FOR RABIES PROPHYLAXIS WILL BE AVAILABLE THROUGH THE CLINICAL PHARMACY OF ALL ACUTE CARE HOSPITALS IN CONNECTICUT. The state will no longer provide vaccine for treatment, nor maintain stocks in the state police barracks. The cost of the vaccine/ globulin will be assumed by the individual treated (or a third party provider, if applicable).

Figure 1
Rabies Prophylaxis Regimens

	<u>RIG</u>	<u>DOSAGE</u>	<u>HDCV</u>	<u>DOSAGE</u>	<u>VACCINATION SCHEDULE</u>
Pre-Exposure ^a	No	---	Yes	3 - 1 ml	
Post-Exposure	Yes	0.06 ml (9IV) ^b per lb. body weight	Yes	5 - 1 ml	RIG one dose only HDCV 1 dose days 0,3,7,14,28 after first dose

^aPre-exposure prophylaxis should be considered for certain high-risk groups (e.g., persons who work in laboratories with rabies virus, veterinarians, persons planning to spend a long period of time in countries where rabies is a constant threat, all persons whose occupation or recreational activities bring them into contact with potentially rabid animals.

^bIf possible, up to half the dose of RIG should be thoroughly infiltrated into the area around the wound, and the rest administered intramuscularly.

This system will also increase availability of the vaccine to individuals for whom pre-exposure vaccination is recommended. Under the current system, vaccine has not been provided for this use. Such restrictions were necessary because of fiscal restraints.

The Epidemiology Section will continue to provide consultation regarding evaluation of exposures and rationale for treatment. In addition, materials will be provided to each hospital pharmacy to assist clinicians in evaluating and treating animal bites.

Detailed guidelines for rabies prophylaxis from the Public Health Services Immunization Practice Committee (ACIP) have been published elsewhere (2,3). However, the occurrence of rabies in specific animal species varies from region to region in the United States. Figure 2 is an algorithm to determine

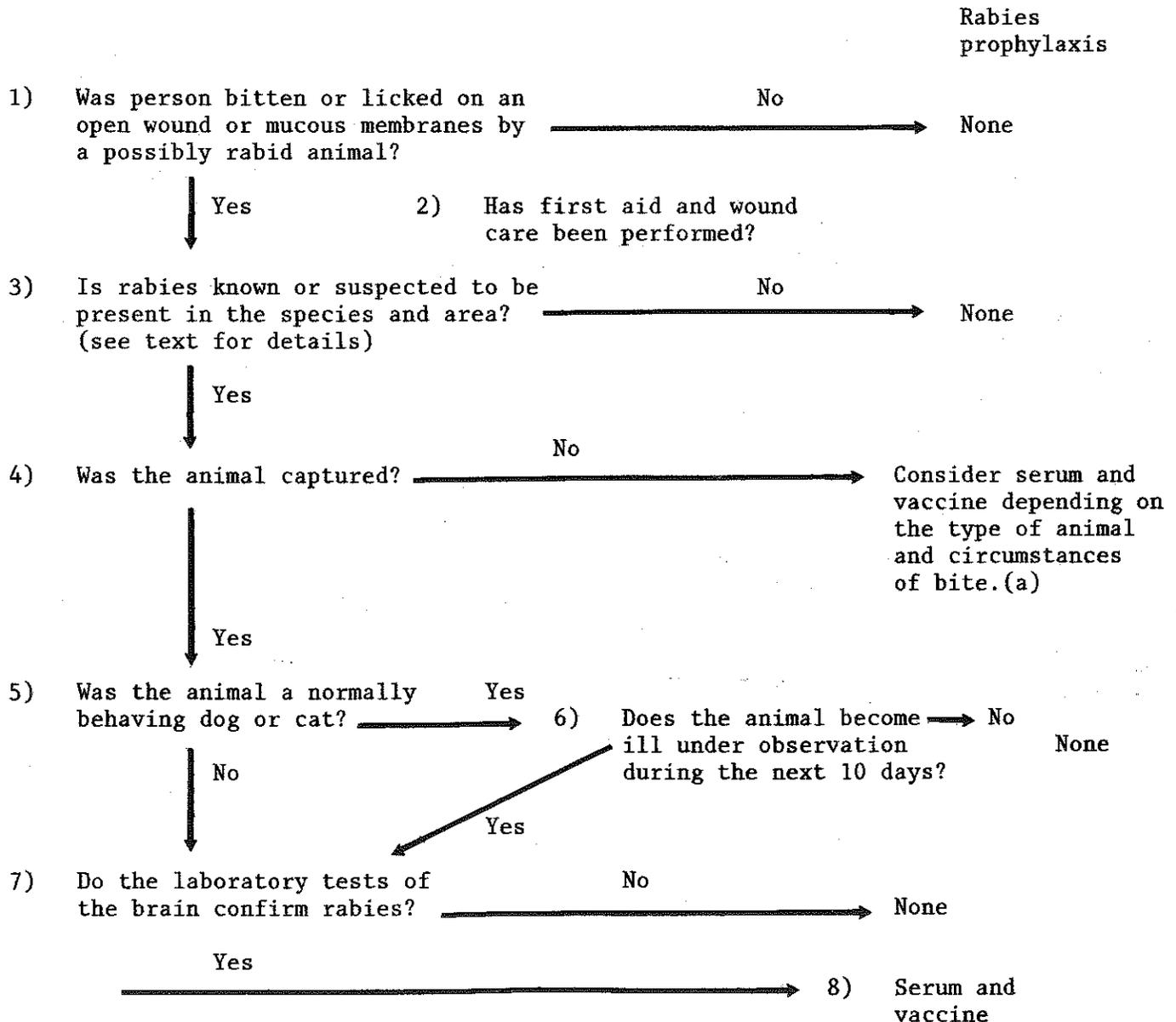
the need for rabies prophylaxis (4). Questions and comments regarding the eight items in this algorithm are presented below.

1. Was the person bitten or licked on an open wound or mucous membrane by a possibly rabid animal?

COMMENTS: Determine whether the bite was provoked or unprovoked. Bites inflicted on a person attempting to feed or handle (e.g., pet) an apparently healthy animal should be considered provoked. If a bite is provoked, it is unlikely to have been caused by a rabid animal.

Casual contact, such as petting a rabid animal, does not constitute a significant exposure and is not an indication for treatment. If only casual contact occurred, we generally do not recommend testing the animal for rabies.

Figure 2
Algorithm for Rabies Prophylaxis



(a) Consult with hospital pharmacy or Epidemiology Section.

2. Have first aid and wound care been administered?

COMMENTS: Immediate and thorough washing of wounds and scratches with soap and water is perhaps the most effective measure for preventing rabies. Tetanus prophylaxis and antibiotics for bacterial infections associated with animal bites should be given if indicated. Unless essential, the wound should not be sutured.

3. Is rabies known or suspected to be present in the species and region?

COMMENTS: The following review will not unequivocally rule out rabies in a given animal species, since all mammals are potentially susceptible to rabies. However, it is useful in assessing the risks and benefits of treatment, especially when the animal is not available for testing or observation.

Rodents (such as squirrels, hamsters, gerbils, guinea pigs, chipmunks and rats) and lagomorphs (including rabbits and hares) are almost never found to have rabies. The State Laboratory does not routinely test rodents or lagomorphs for rabies. These animals will not be tested without consultation and authorization by the Epidemiology Section.

In Connecticut, rabies is consistently found only in bats, with about 5-10% of those tested being positive for rabies. While transmission from bats to other mammals is theoretically possible, this has not been documented in Connecticut, despite numerous dog and cat exposures to rabid bats. Rabid bats have been detected in all counties in Connecticut and the number of positive animals each year has remained constant. One rabid fox was detected in Litchfield County in 1974, one in New London County and two in Hartford County in 1976 and two more in 1978. Since that time, no further foxes have been found to be positive (176 foxes were tested between 1974-1981). The last rabid cat and dog in Con-

necticut were reported in 1941 and 1949 respectively (5).

While rabies in raccoons has been reported in the southeastern United States, and has more recently been documented in Virginia, it has not been found in Connecticut in over 20 years. State records document only one case of a rabid raccoon which occurred in 1960. While rabies in skunks is common in many parts of the United States, only five rabid skunks have been found in Connecticut since 1921, the last three cases occurring in 1964. Nonetheless, 50% of all laboratory confirmed rabies in the United States is found in skunks, the Connecticut General Assembly passed legislation prohibiting the possession, breeding, propagation, or sale of skunks in the state (6). Rabies has not been documented in any other terrestrial animals in Connecticut for more than 25 years.

4. Was the animal captured?

COMMENTS: (IF ANIMAL NOT CAPTURED) If a bat bite occurred, but the bat escaped, we recommend treatment. For all other animals not captured, an individual decision must be made considering the risks of disease and of treatment.

5. Was the captured animal a dog or cat? IF A DOG OR CAT: quarantine and observe.

6. Does the animal become ill during the observation period?

COMMENTS: Quarantine and observation for 10 days can be used to rule out rabies only in dogs and cats. Despite the lack of evidence for rabies in domestic animals since 1950, almost 3,000 dogs and cats have been tested from 1971 through 1981. Much of this testing is unnecessary. The recommended procedure for evaluation of dogs and cats for rabies is observation of the biting animal for 10 days. Rabid cats and dogs will invariably manifest symptoms in this time period.

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