



RABIES WATCH

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The Importance of Tetanus Prophylaxis and the Role of Tetanus Immune Globulin for Rabies Exposures

Animal bites and scratches are high-risk opportunities for rabies transmission; tetanus, a potentially fatal vaccine-preventable infection,^{1,2} may also be transmitted in these situations.^{1,3,4} Dr Kumar Alagappan, Professor Chair Ad Interim of Emergency Medicine at The University of Texas MD Anderson Cancer Center, recently provided some guidance to keep in mind when addressing tetanus prophylaxis in animal wound care. “Tetanus may occur *whenever* there’s a break in the skin,” said Dr Alagappan. “A dirty wound can potentially allow the tetanus spores to enter the body and become vegetative. Any time there is a bite or an injury from an animal, and there is a break in the skin, then you ought to be concerned about tetanus.” Key advice from Dr Alagappan when dealing with tetanus-prone animal wounds include the following:

- Animal-related bites, scratches, and wounds may require tetanus prophylaxis⁵
- Thorough wound cleaning is important for both rabies and tetanus prophylaxis^{1,3}
- Tetanus immune globulin is an important component of tetanus prophylaxis⁵
- Tetanus immune globulin should be used for any patient with an incomplete or uncertain tetanus vaccination status⁵
- The risk for tetanus infection may be higher with bites or injuries from farm animals¹

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Animal-Related Bites, Scratches, and Wounds May Require Tetanus Prophylaxis

Following an injury, the timely administration of postexposure prophylaxis in a manner consistent with the recommendations of the United States Advisory Committee on Immunization Practices (ACIP)⁵ (Table) can prevent clinical tetanus from developing or lessen the severity of infection.² However, surveillance suggests a large number of patients may not receive optimal tetanus prophylaxis.⁶ As Dr Alagappan stressed, “You’re supposed to consider tetanus whenever there’s a wound, and remember to ask about the patient history of vaccination. It’s standard of care.”

Table. ACIP Recommendations for Tetanus Prophylaxis in Routine Wound Management Among Adults⁵

Previous doses of tetanus toxoid	Clean and minor wound		All other wounds ^a	
	Tetanus toxoid-containing vaccine	Human tetanus immune globulin	Tetanus toxoid-containing vaccine	Human tetanus immune globulin
<3 doses or unknown	Yes	No	Yes	Yes
≥3 doses	Only if last dose given ≥10 years ago	No	Only if last dose given ≥5 years ago	No

^a Such as, but not limited to, wounds contaminated with dirt, feces, soil, and saliva; puncture wounds; avulsions; and wounds resulting from missiles, crushing, burns, and frostbite.

Thorough Wound Cleaning Is Important for Both Rabies and Tetanus Prophylaxis

All wounds should be cleaned of necrotic tissue and foreign bodies.¹ “The thing about tetanus is you want to clean the wound properly,” advised Dr Alagappan. “You’ve got to irrigate the wound well, you’ve got to make sure there’s no dead skin left in the wound, you’ve got to take out any soil, any sort of outside contaminants—you want to clean out the wound completely.”

Tetanus Immune Globulin Is an Important Component of Tetanus Prophylaxis

Tetanus is caused by tetanospasmin, a neurotoxin produced by *Clostridium tetani*.¹ “A tetanus vaccine promotes development of anti-tetanus toxoid antibodies,” explained Dr Alagappan. However, in patients without full vaccination against tetanus, early doses of the vaccine may not immediately produce antibodies, but instead simply prime the immune system to do so; thus, tetanus immune globulin should be utilized to provide temporary immunity.¹ “Tetanus immune globulin is passive immunity,” Dr Alagappan further clarified. “It’s an antibody for the tetanus tetanospasmin that can be used to try to deactivate any tetanospasmin that’s in the body.”

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Tetanus Immune Globulin Should Be Used for Any Patient With an Incomplete or Uncertain Tetanus Vaccination Status

Persons with wounds that are neither clean nor minor, and who have had fewer than 3 prior doses of tetanus vaccine or have an unknown history of prior doses should receive tetanus immune globulin as well as a tetanus toxoid-containing vaccine.¹ As Dr Alagappan explained, “If the patient has not had a full immunization series, then they’re going to need not only tetanus vaccine but also tetanus immune globulin. The only time you don’t give tetanus immune globulin is if the patient has full vaccination status as a child or an adult, and thus it’s important to get that history from the patient. If you don’t have adequate titers of tetanus antibody or if you’re not sure of the vaccination status of the patient, you want to give both the active vaccine and the immune globulin for immediate protection.”

The Risk for Tetanus May Be Higher With Farm Animals

Tetanus spores are ubiquitous in the environment,² but in addition to other reservoirs, they are carried in the intestines and feces of large farm animals such as horses, sheep, and cattle and are frequently found in the soil in agricultural areas.¹ “A lot of farm animals carry *Clostridium tetani* in their intestines and feces,” confirmed Dr Alagappan. “When you have an injury on a farm, you might get some of these bacteria into your body—it’s easy to get dirt or something in the wound that might have *Clostridium*. That’s why you’re more likely to have tetanus with farm animals, because these large animals carry *Clostridium*.”

Conclusion

Ultimately, individuals can be prevented from developing tetanus via 2 main interventions: the investigation of a patient’s vaccination history and the provision of timely prophylaxis, particularly to patients who are not known to be fully immunized.²

HyperTET® S/D (tetanus immune globulin [human]) is indicated for prophylaxis against tetanus following injury in patients whose immunization is incomplete or uncertain.

HyperTET S/D is made from human plasma. Plasma products carry a risk of transmitting infectious agents, such as viruses, and theoretically, the Creutzfeldt-Jakob disease (CJD) agent, despite steps designed to reduce this risk.

All quotations in this article were provided by Kumar Alagappan, MD, in a personal interview on April 7, 2016.

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IMPORTANT SAFETY INFORMATION

HyperTET® S/D (tetanus immune globulin [human]) is indicated for prophylaxis against tetanus following injury in patients whose immunization is incomplete or uncertain.

HyperTET S/D should be given with caution to patients with a history of prior systemic allergic reactions following the administration of human immunoglobulin preparations.

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Slight soreness at the site of injection and slight temperature elevation may be noted at times. Sensitization to repeated injections of human immunoglobulin is extremely rare. In the course of routine injections of large numbers of persons with immunoglobulin, there have been a few isolated occurrences of angioneurotic edema, nephrotic syndrome, and anaphylactic shock after injection. Administration of live virus vaccines (eg, MMR) should be deferred for approximately 3 months after tetanus immune globulin (human) administration.

HyperTET S/D is made from human plasma. Products made from human plasma may contain infectious agents, such as viruses and theoretically, the Creutzfeldt-Jakob (CJD) agent that can cause disease. There is also the possibility that unknown infectious agents may be present in such products.

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