Haiti Cholera Outbreak

The 2010 Haiti cholera outbreak, which sickened almost 300,000 people and claimed more than 4500 lives, was caused by bacteria inadvertently introduced into the country as a result of human activity, according to 2 independent studies.

In one study, French researchers and members of Haiti’s Health Ministry provided circumstantial evidence that fecal contamination of a local stream that drained into the Artibonite River initiated the epidemic. The source of the contamination was a United Nations (UN) military camp with deficient sanitation that Nepalese soldiers were inhabiting, the researchers reported (http://tinyurl.com/3qudf6p). In the second study, an expert group working on behalf of the UN said that numerous factors contributed to the outbreak (http://tinyurl.com/3mhn8uf). They found that the Meye Tributary of the Artibonite System of the Artibonite River was contaminated with a South Asian strain of Vibrio cholerae, but that the pathogen could not have spread without deficiencies in Haiti’s water, sanitation, and health systems.

To prevent similar catastrophes in the future, the UN report recommends such precautions as screening UN personnel from cholera-endemic areas for the presence of V cholerae.

Nuclear Sites and Leukemia

Living near a nuclear power plant does not increase the risk of childhood leukemia, according to findings from a study by scientists in the United Kingdom.

In contrast, a 2008 German case-control study that reported that the risk of leukemia in children younger than 5 years living within 5 km of nuclear power plants—but not beyond that distance—to be almost double that of population-matched controls (Kaatsch P et al. Int J Cancer. 2008;122[4]:721-726).

Both British and German studies looked at the risk of leukemia around potential nuclear sites and found risk levels in some sites to be similar to those around active nuclear installations, suggesting that factors other than radiation may be partly responsible for the association.

Treating Snakebites

Giving low-dose adrenaline to individuals bitten by a poisonous snake before treating them with snake antivenom is safe and reduced the risk of acute severe reactions to antivenom, report researchers from Sri Lanka and the United Kingdom (de Silva HA et al. PLoS Med. 2011;8[5]:e1000435).

In a study of 1007 patients in 5 hospitals in Sri Lanka, the researchers randomized patients to receive low-dose adrenaline, promethazine, hydrocortisone, or placebo—alone or in any possible combination—immediately before treatment with an antivenom infusion. Compared with placebo, pretreatment with adrenaline reduced the odds of severe reactions to the antivenom by 43% at 1 hour and 38% over 3 hours. Promethazine and hydrocortisone had no significant effect.

Globally, at least 421,000 envenomings and 20,000 deaths from snakebite occur every year.

Preventing Malaria

Researchers have demonstrated that a technique for artificially inducing immunity to malaria appears to offer a longer period of protection than the typically short-lived immunity produced by a previous bout of the infection (Roestenberg M et al. Lancet. 2011;377[9779]:1770-1776).

In an open-label study from November to December 2009, researchers from the Netherlands did a follow-up study in 10 volunteers who had previously undergone an immunization procedure involving repeated exposure to infectious mosquito bites while under chloroquine prophylaxis. In the new study, the researchers rechallenged 6 volunteers with the bites of 5 mosquitoes infected with Plasmodium falciparum (4 of the original volunteers did not meet inclusion criteria for reinfections). Four of the 6 previously immunized volunteers were found to be free from infection after this first attempt to reinfect them 2.5 years after immunization.

While the researchers previously had shown they could experimentally induce immunity to malaria in the 10 volunteers, the length of time immunity would last was not known. One limitation to the study is that the same strain of parasite was used to reinfect volunteers as was used initially to give immunity; in the natural environment, there is genetic variation in parasites.—M. J. Friedrich