



The CBCSF Newsletter

Issue 4, October 2003

A Publication of Community Blood Centers of South Florida, Inc.

Call for directions Donor Centers

Boca Raton
(561) 451-4389

Cooper City
(954) 680-9410

Coral Springs
(954) 752-6322

Fort Lauderdale
(954) 491-9397

Homestead
(305) 245-4757

Kendall
(305) 270-6425

Key West
(305) 294-7668

Lauderhill
(954) 735-9600

Miami/Civic Center
(305) 549-7214

Miami Children's
Hospital
(305) 667-6503

Mt. Sinai Hospital
(305) 674-2116

Miami Lakes
(305) 362-9713

Palm Beach Gardens
(561) 627-5165

Perrine
(305) 256-1660

Pompano Beach
(954) 782-2972

Sunrise
(954) 747-3921

Malaria in South Florida

The recent report of eight cases of malaria in the City of Lake Worth in Palm Beach County caught most of South Florida's population by surprise. Sporadic outbreaks of malaria have occurred in earlier years in Dallas, San Diego, and other cities around the country, but malaria is associated in the minds of most Americans with the underdeveloped world where nearly two million malarial deaths - mostly young children - occur annually. To have malaria appear in our own part of the country raised the public's concern about this old parasitic disease.

Malaria is caused by a blood borne parasite called "plasmodium" which has two hosts. The primary host is always a species of anopheles mosquito of which there are nearly a hundred, including several species which probably were indigenous to the New World. The intermediate host is humans where the parasite lives and multiplies in vast numbers in liver cells and then migrates to red blood cells. The life cycle of the organism is completed when another anopheles mosquito bites a human and is in turn infected.

There are four species of plasmodia which infect humans. The most widespread is Plasmodium vivax, found throughout the tropics and the species of plasmodium found recently in Lake Worth. It causes less severe disease but can still be fatal. Plasmodium falciparum is mostly found in sub-Saharan Africa and is the most severe. The remaining two species - ovale and malarie - are less common and cause less severe illness. Other mammals have

malaria too. Rodent malaria is caused by Plasmodium yoelli, for example.

Malaria was not indigenous to the western hemisphere. It was unknown to the Indian populations of the New World and was probably introduced along with other diseases such as smallpox at the end of the fifteenth century by European settlers. The Aztecs, for example, built their capital city Tenochtitlan (Mexico City) in the middle of a swampy lake without ever being affected by malaria. It became widespread in the United States in the following centuries and was a significant cause of death and illness until the 1930's when major changes in America's way of life as well as the later development of insecticides effective against mosquitoes led to its eradication.

*malaria - mal'aria,
Italian, bad air. Refers
to the stench from
stagnant water around
which illness was
noticed to occur.*

An Old World Disease

Malaria was a common illness throughout Europe in the middle ages. Knowledge of the way it spreads was entirely lacking until the late 19th century when the association of the disease with stagnant mosquito breeding water became known. Rural populations were especially affected as they slept in houses with open, unscreened windows, near rivers and streams which largely stopped flowing in dry years. The invasion of Holland in 1802 during the Napoleonic wars by the English failed when their army camped in swampy lowlands and essentially the entire army came down with what was called "ague", characterized by aches and pains, shaking chills and fevers, and generalized weakness - the symptoms known now to be caused by malaria. Malaria remained a major problem in Holland until the digging of canals and land reclamation destroyed the breeding habitat of mosquitoes.

(continued on back)

Community Blood Centers of South Florida
a non-profit organization

Serving Donors & Patients in Monroe,
Miami-Dade, Broward & Palm Beach Counties
(800) 357-4483 • Email: webmaster@cbcsf.org
<http://www.cbcsf.org>

The Indians of Peru discovered that the bitter tasting bark of what they called the “Fever Tree” lessened and eventually would end the symptoms of the disease. Countess Anna del Chinchon, wife of the Spanish Viceroy of Peru, was successfully treated in 1632 using this “Indian Remedy” and the Chinchona tree from which the extract came was named for her. We now

know the bark contained quinine which rapidly became accepted as the first treatment for malaria. The British used quinine extensively in India for malarial prophylaxis and found that mixing it with lime juice and gin made its bitter taste more palatable. Modern drugs such as chloroquine are highly effective in curing malaria, though some resistant strains have developed in Africa and Asia.

The urbanization of many parts of the world along with economic development make it unlikely that malaria could ever reestablish a foothold in those parts of the world where it is currently under control. This includes South Florida.

The development of DDT in the middle 1940’s proved helpful by controlling mosquito populations and interrupting the parasite’s life cycle. Mosquitoes rapidly developed immunity to DDT, but other insecticides followed which were just as effective. Insecticides by themselves cannot control malaria as some mosquitoes always survive even the most intensive spraying campaigns. Large scale use of insecticides also has undesirable effects on birds, fish, and humans.

Important Information!

New! Blood donors will now be notified via e-mail when their cholesterol results are available for viewing on our website. If we have your email address you will receive a notice that your cholesterol results are available at www.cbcsf.org.

Blood donors who join our email list will receive four or five newsletters annually, so be sure to give the registrar your email address when you visit us to give blood. MSN or AOL users should add webmaster@cbcsf.org to their list of safe contacts.

Confidentiality Statement: Community Blood Centers of South Florida is committed to respecting your privacy. We will not share, rent, or sell personal information provided by you, including your email address, to other parties. The information you provide will only be used to support your relationship with us as a blood donor or potential donor.

The Lake Worth Outbreak

Cases of Plasmodium vivax malaria were first diagnosed in August, 2003. None of the eight victims had recently been out of the country, so the question remains how the mosquitoes which bit them became infected in the first place. The best answer is that someone, referred to as the “index” case, with a subclinical case of Vivax malaria acquired in another part of the world, lived or worked in Lake Worth, was bitten by endemic anopheles mosquitoes which then flew on to bite at least eight other people. The affected area of Lake Worth was sprayed right after Labor Day in the hopes of killing all affected mosquitoes. Only one case has been reported since. The index case has not yet and may never be identified.

Malaria can be spread by donated blood, and like so many other infectious diseases recently became a concern of this blood center. The spraying campaign has probably interrupted the malarial life cycle but the eight cases of malaria in our own backyard are a reminder that we must be vigilant and never forget history lest we be forced to repeat it.

Malaria Control

Malaria ceased to be a problem in most of Europe, North America, and large parts of Asia as the human population moved away from swampy locales into cities where anopheles mosquitoes simply didn’t live. Conversely, malaria remains a day-to-day threat in India, sub-Saharan Africa, South America, the Caribbean Basin and Southeast Asia where large populations live in close proximity to stagnant mosquito breeding water. There are estimated to be 500 to 600 million active cases of malaria worldwide making malaria the world’s most common parasitic disease.

The Tennessee River Valley was the center of malaria in the United States right up to the 1930’s when the Tennessee Valley Authority regulated the river’s flow ending the periods of low water during which mosquitoes could breed in huge numbers.

Frequently Asked Question

- Q. If Quinine is an effective anti-malarial, can I protect myself by drinking Gin and Tonics?
- A. No. A standard bottle of quinine water contains 30 milligrams of quinine. A therapeutic dose of quinine is 900 milligrams a day - the equivalent of 30 drinks a day.