Malaria Information

Making the decision to travel and/or move to a country where malaria abounds can be daunting. Making wise choices about prevention, knowing the symptoms of malaria and how to treat are important decisions that you and your family must take into consideration. Hopefully the following information will be practical and make the options available to you, clear.

Prevention

Mosquito avoidance is key to not getting malaria. After 5 p.m. you should wear mosquito repellent (available with DEET in Indonesia) on your exposed skin or wear long pants and sleeves. Keep the screens on your home in good repair. Spray your home regularly for mosquitoes especially in bathrooms, closets, behind curtains and under furniture. Sleeping under a mosquito net at night will help to reduce your chances for getting malaria. Treating the nets with Permethrin will help even more. It is available in Jakarta and at times in Abepura and more recently even available at the market in Sentani.

Mosquito nets are available locally at the market in town, also "department stores" carry them. They come in all kinds of sizes: from small to large. Also WHO distributes nets through the local health department, for free. Some nets have the Permethrin embedded in the thread, this kills the mosquito on contact for the life of the net.

Pregnant women are *three* times as likely to get bitten by a mosquito. A pregnant women sleeping under a Permethrin net will help to protect everyone else in the room. For the mosquitoes will want the pregnant lady's blood and will die on the net, trying to get to her.

Prophylaxis

Drug prophylaxis is recommended for anyone newly arriving on the field, pregnant women, children under 2 and those visiting the area. Continuing to take drug prophylaxis is an individual decision. It is ok to be on a prophylaxis as long as there is no negative reaction. Being on a prophylaxis does not seem to decrease the effectiveness of the medicine, but if you get malaria while taking prophylaxis that medicine will NOT be effective for treatment. Keep in mind that different options work for different individuals and families.

DOXYCYCLINE: 100 mg daily for children over 10 and adults. This is a good choice for people coming on short term assignments. Pregnant women should not take this medicine after their first trimester . This medicine should be taken with food, since it upsets some stomachs. Can be taken with milk products. Drink a big glass of water with each dose. This drug does make one more sensitive to the sun. Doxycycline should be started 1-2 days before entering a malaria area. It is cheap and easily available in Indonesia.

MEFLOQUINE (LARIUM):

Adult dose: 1 tablet 250 mg weekly
Pediatric dose: (15-19 kg) 1/4 tablet 62.5 mg weekly
(20-30 kg) ½ tablet 125 mg weekly
(31-45 kg) 3/4 tablet 187.5 mg weekly
over 45 kg 1 tablet 250 mg weekly

This medicine is safe for pregnant women. This drug needs to be started 2 weeks before entering a malaria area. Best if taken with food and a full glass of water.
There is much evidence showing that this drug can cause serious psychiatric symptoms in some people. If you experience unusual mood swings, depression, or hallucinations, stop the drug. Mefloquine is contraindicated in people with heart problems or previous history of psychiatric illness.* *This medicine lasts a long time in your blood, so reactions to it will take a couple weeks to resolve. This drug is expensive and not available in Indonesia.

MALARONE:

Adult dose and children >40kg: 1 tablet 250mg daily
Pediatric dose: (11-20 kg) 1 pediatric tablet (62.5 mg) daily
(21-30kg) 2 pediatric tablet (143 mg) daily
(31-40kg) 3 pediatric tablet (205.5 mg) daily

Not approved for pregnant women. This drug needs to be started 1-2 days before entering a malaria area. Should be taken with food or milk at the same time daily. Can crush for children. Malarone is expensive and is not available in Indonesia. Malarone works better against P Falciparum (tropika), and not as well in protecting against P vivax (tersiana). Therefore, some people still get malaria, but it is usually P. Vivax.

Primaquine:

Dose for adults is 30mg daily.
For children the dose is: 0.5 mg per kg daily.

For 'causal' prophylaxis, primaquine is up to 98% effective at preventing malaria before it gets into the blood. Up to ¼ of people can have stomach side effects. It should NEVER be used by people with G6PD deficiency because it causes red blood cells to burst. We advise all people coming to the field to be tested for G6PD levels before arrival on the field. Anyone with dark or tea colored urine should stop primaquine immediately. Primaquine is available in Indonesia. People leaving for furlough or taking short trips to a highly malarious area can use this short term. It can also be taken for 14 days when going on furlough to prevent both kinds of malaria after leaving the field.

CHLOROQUINE+CTM+DARAPRIM+FOLIC ACID:

Adult and children Chloroquine dose is: 5mg/kg BASE weekly (max dose 300mg base)
CTM dose is: adults...4mg, children ....2mg. Weekly.
Daraprim dosage: adults 25mg weekly
Children >10 years old, 25 mg
7-10 yrs, 18 mg. 2-6 yrs, 12 mg. < 2yrs, 6mg.
Folic Acid: Adults 5mg weekly/ children 2.5 mg weekly.

This option is significantly less effective than other options. Adding the Daraprim helps to make it more effective. Exta folic acid is needed because the Daraprim interferers with folic acid metabolism in cells and

parasites. Pregnant women should not take Daraprim. This combinations needs to be started 2 weeks prior to entering malaria area. Chloroquine and CTM are readily available and inexpensive in Indonesia. Daraprim in not available in Indonesia.

PALUDRINE+CHLOROQUINE+CTM+FOLIC ACID:

Paludrine dose for adults and children > 10 yrs. 200mg daily
7-10yrs 150 mg daily, 2-6 yrs 100mg daily, <2yrs 50 mg daily.
For Chloroquine, CTM and Folic acid recommended doses see in the above paragraph.

Paludrine is safe in pregnancy. It is not available in the United States or in Indonesia. There are sources of it in Europe and Australia that can be arranged but take some work. It is safe for children. The most common side effect is mouth ulcers which often go away after a couple of weeks if you keep taking it.

Fansidar:

This drug was removed from prophylaxis options in the mid 1980s because of a 1/17000 risk of fatal Steven's Johnson Syndrome. It has a long (7-10 day) half life and lasts in your blood for weeks, so if you get allergic to the sulfa component in it you'll itch for a long time! Recent studies have shown that treating students and pregnant women in malarious areas with a monthly two pill dose prevents severe malaria and improves school performance and attendance. There are large areas of New Guinea (both sides of the border) with malaria resistant to fansidar, so if you notice it isn't working well, switch to a different medicine. Avoid during late pregnancy because it can be related to patent ductus arteriosus problems in babies.

ALTERNATIVE OPTIONS:

There are many things people do to prevent malaria in our community. The ones we've listed have large bodies of scientific data to show that they are reasonably safe and likely to be helpful. No prophylaxis is 100% effective. No prophylaxis or treatment is completely safe. Use good judgment and careful consideration with all medicines you take.

There are almost certainly other helpful compounds that do not have clear scientific data to show that they are safe and effective. I've seen new articles on garlic, olive leaf extract, tea tree oil, papaya leaf tea, guava leaves, Demal and even Round-up, stating that they can be used in certain ways to reduce risk of or treat malaria.

The internet has a huge amount of material on herbal prophylaxis and treatments for malaria. Be cautious about this data and its scientific validity until you check out the actual studies that 'prove' or 'show' both efficacy and safety. Anecdotes are not good enough! Many of these sites only want to make money by selling or promoting a product. Look for published data in peer review journals with stiff criteria about scientific methodology before you act on their advice.

If you decide to use these products, keep careful personal notes of side effects and the frequency of malaria in

your home.

If you want me to help you understand the criteria for a good medical study for either drug safety or drug efficacy, please drop me an email.

The DEA and WHO have stringent requirements for medicines before they permit them to be sold as both effective for the stated use and safe for a majority of users. Compounds that have been rejected by these organizations usually lack either convincing evidence of effectiveness or adequate evidence of safety. All medicines, both conventional and herbal, have side effects, potential allergens, and significant toxicities. Please exercise caution in what you expose yourself and your family to. Including malaria.

Thanks and may the Lord bless and protect us to do His work.

Dr. Di and Medical Team

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