Another One-Pill Malaria Cure Looks Promising

By Josh Bloom — October 6, 2015

Malaria has been in the news quite a bit lately, and well it should.

On Monday, the Nobel Prize in Physiology or Medicine was awarded [1] to three scientists for their work in infectious diseases especially those that affect third-world countries.

One of the scientists, Dr. Tu Youyou [2] received the award for his work that led to discovery of artemisinin, one of the drugs that's used as part of a combination therapy which is credited with saving 100,000 lives [1] in Africa alone.

In July, a possibly game-changing breakthrough drug against the infection was reported [3] by Dr. Margaret Phillips and colleagues at the University of Texas Southwestern Medical Center. The drug, DSM265, which is about to enter phase II clinical trials, has demonstrated properties that suggest that it could be a single-pill cure for malaria.

This is essential for two reasons.

First, malaria strains that are resistant to artemisinin are emerging, meaning that it will gradually lose its effectiveness. Second, patient compliance in a serious problem in impoverished and developing countries. The failure of a patient to complete a full course of treatment not only puts the individual at risk, but also accelerates the rate of resistance. The availability of a single-drug cure would alleviate both of these problems.

Now, another group, from Portland State University, has reported [4] on the progress of another antimalarial that shows promise as a single-pill cure. Writing in the Journal of Medicinal Chemistry, Papireddy Kancharla and colleagues described a class of compounds called tambjamines, one of which named KAR425 is a very potent killer of a panel of Plasmodium falciparum strains (the plasmodia that cause malaria).

Furthermore, KAR425 seems to display low toxicity, but data are lacking. The drug protects, and cures mice in a single dose that have been infected by the malarial protozoan.

It has been a very good year in the fight against this fatal infection. The death rate has dropped by 60 percent
since 2000, mostly due to insecticide-treated bed nets, and, to a lesser extent, the use of artemisinin, but the infection still takes a huge toll.

The World Health Organization estimates that 437,000 African children, and 453,000 children worldwide, died of malaria before age five in 2013.

The availability of a single-pill cure would most certainly lower those numbers significantly.