BBC NEWS

'Double whammy' malaria drug hope

A new "double whammy" malaria drug which works on its own and reverses resistance to other drugs is being developed by US researchers.

The drug contains a chemical which prevents the malaria parasite getting rid of a toxic by-product of feeding on red blood cells.

It also disables a genetic defence that prevents the existing drugs chloroquine and quinine working, Nature reports.

But the team says it could be at least 10 years before the drug is available.

There are around 250 million cases of malaria and 880,000 deaths worldwide each year.

Food

The drug, developed by Jane Kelly and colleagues at Portland State University, is called an acridone derivative.

It targets the way mosquitoes digest haemoglobin in red blood cells, from which they take amino acids as their food.

A substance called haem, a by-product of this process, is toxic to the malaria parasites, carried by mosquitoes, so they have to convert it into a pigment called haemozoin.

This drug prevents that conversion taking place, meaning the toxic pigment remains.

" **We would hope to make existing drugs like chloroquine and quinine useful again** "
Dr Michael Riscoe, Portland State University

It is the same effect as that of chloroquine and quinine.

But the researchers have found that, as well as working on its own, the acridone can restore and enhance the effectiveness of these other drugs too.

Malaraia parasites have developed a genetic mutation preventing chloroquine and quinine absorption, and expelling them from the parasite's body.

This new drug is able to disable that defence mechanism, allowing the chloroquine and quinine to do their job.

The researchers have successfully tested the compound in the lab and on mice, however they need to do more animal studies on the safety and effectiveness of the drug before they move on to human studies.

It is also relatively inexpensive to make and has so far appeared to be safe in tests.

'10 years'

Dr Mike Riscoe from Portland State University who worked on the study, said: "What we wanted was to design a molecule that would be of itself an antimalarial drug, but that would have the power to work together with drugs like chloroquine and quinine, even against parasites that were resistant to those drugs.

"We would hope to make existing drugs like chloroquine and quinine useful again, so combining those with this new one could help to combat the rising tide of drug resistance in this neglected disease.

But Dr Jane Kelly, who led the research, warned: "In the pharmaceutical industry, it can take 10 years and $1bn for a drug to be usable in humans, so we are still a long way away from that."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7987459.stm