

thought and could represent a new strain of the disease more dangerous to humans, says a new study published in the UK-based medical journal, the *Lancet* (2004;363:1017-24).

The study's authors, Professor Balbir Singh from the Faculty of Medicine and Health Sciences at the Universiti Malaysia Sarawak and colleagues, found that the monkey malaria parasite, *Plasmodium knowlesi*, accounted for 58% of malaria cases in Kapit division in Sarawak, Malaysia. These cases had previously been misidentified as *Plasmodium malariae*, one of the four human parasites.

Blood samples taken between March 2000 and November 2002 from 208 patients with what was thought to be *P. malariae* were tested using genetic sequencing and 120 of these turned out to be *P. knowlesi*. The misdiagnosis is thought to have occurred due to similarities in appearance on thick blood-films between the two strains and the fact that laboratory technicians are only trained to recognize the four species of human parasites, *Plasmodium falciparum*, *Plasmodium vivax*, *Plasmodium ovale* and *P. malariae*.

Nick White, Professor of Tropical Medicine at Mahidol University in Thailand and Oxford University in England, said in a commentary accompanying the study that repeated misdiagnosis of monkey malaria could explain occasional reports of malaria in people exploring or travelling through uninhabited jungle areas or nature reserves.

"There have been rare reports of natural human infections with monkey parasites but nothing on the scale reported by Balbir Singh and colleagues," said White in the commentary.

Bernard Nahlen, Senior Scientific Adviser at WHO's Roll Back Malaria programme in Geneva, added that there are many non-human strains of malaria, which can infect birds, reptiles and other mammals.

"The finding here that a monkey-strain has been found frequently in humans is the interesting point," said Nahlen.

The study raises the question of whether monkey malaria was already or would become capable of human to human transmission.

Whereas *P. malariae* multiplies every three days in the blood and infections are never severe, *P. knowlesi* multiplies daily and is potentially dangerous.

However, John Barnwell, Chief of the Research and Development Laboratories Unit of the Malaria Branch Division

of Parasitic Diseases at the US Centers for Disease Control and Prevention, pointed out that because antimalarials have not been used on monkeys, their parasites are still drug-sensitive and are easily treated with chloroquine. What is important is the potential for the emergence of a new human disease, said Barnwell.

Scientists have established that human-to-human transmission of monkey malaria is possible under laboratory conditions but so far have not found cases of natural transmission.

"The very high numbers of infections in this small area and close timescale could set up the potential to have natural human-to-human transmission happening now or in the near future," Barnwell said, referring to the study.

"This is how new diseases emerge all the time and the potential to establish a new human malaria is there," said Barnwell, adding that genetic data suggests that *P. vivax*, the second major human malaria strain which first infected humans 40 000 to 60 000 years ago in south-east Asia, was derived from the local monkey malaria populations.

Barnwell said it would be interesting to monitor whether other species of monkey malaria such as *Plasmodium cynomolgi* which are present in monkeys in the Sarawak region of Borneo could be infecting humans too.

Dr Kevin Palmer, Regional Malaria Adviser at WHO's Regional Office for South-East Asia in Manila, agreed that more research was needed to establish the full implications of these findings.

"At this point it is clearly not a public health problem but if it turns out that *P. knowlesi* has or is in the process of adapting to human transmission, we may be facing a future problem ... a fifth species of human malaria," said Palmer. ■

Fiona Fleck, Geneva

Microbicides preventing HIV infection could be available by 2010

First generation topical microbicides aimed at preventing HIV infection in women could be available as early as 2010, researchers told participants at the Microbicides Conference 2004 held in London on 28-31 March.

About 60 of these drugs in the form of creams, gels, sponges or pessaries, designed to prevent the sexual spread of HIV, are currently under development.

Of those, 18 are at clinical trial stage including six that are due to enter large-scale phase III trials in the second half of this year. Topical microbicides work by forming a protective coating around mucosal cells that either kills or inactivates HIV reducing the risk of vaginal or anal transmission.

"Even if the products are as low as 40% effective — which means they would bring about a reduction of 40% in the HIV transmission rate — they could still have a major impact on public health," said Professor Janet Darbyshire of the UK's Medical Research Council and co-chair at the conference. "However we hope that they will be considerably more effective — certainly some of the 'second generation' products in the pipeline look very promising."

Research from the London School of Hygiene and Tropical Medicine showed recently that some 2.5 million new cases of HIV infection globally could be prevented in just three years even if the microbicide only brought about a reduction of 60% in the HIV transmission rate (*BMJ* 2004;328:305).

In the absence of an effective vaccine, increasing attention is being paid to the development of microbicides. According to a recent commentary in the UK-based medical journal, the *Lancet* (2004;363:1002-3), in many developing countries, AIDS is taking a disproportionate toll on women. Biologically, women may be up to four times more vulnerable to HIV infection. The need for a discreet female-controlled method for the prevention of HIV-infection is further affirmed by the lack of economic and social power preventing many women from negotiating safe sex.

"The development of a safe, effective microbicide would be the biggest innovation in women's reproductive health since the introduction of the [contraceptive] pill," said Lore Heise, Director of the Global Campaign for Microbicides.

Stephen Lewis, the United Nations envoy on AIDS, told the conference that the numbers of infected women had grown exponentially, so that virtually half the infections in the world were amongst women. In Africa the rate was 58%, rising to 67% between the ages of 15 and 24, he said.

"This is a cataclysm, plain and simple. We are depopulating parts of the continent of its women," Lewis said.

Like vaccines which are also at clinical trial stage, microbicides may

succeed where safe sex campaigns promoting condom use and abstinence have failed to change sexual behaviour, with devastating consequences.

One of the first microbicide products likely to come on the market in the next 5 to 10 years is TMC-120 produced by US pharmaceuticals giant, Johnson & Johnson. The US company told the conference it would grant royalty-free rights to this promising new drug to the US-based non-profit organization, the International Partnership for Microbicides.

The drug, originally developed as an antiretroviral by Johnson & Johnson's Belgian subsidiary, Tibotec Pharmaceuticals, has since been developed into a gel for use particularly in resource-poor countries and has already undergone early stage clinical trials. Under the agreement, the International Partnership for Microbicides will conduct the remaining trials necessary for regulatory approval, which could cost between US\$ 50 million and US\$ 100 million.

Other products entering phase III trials include dextrin sulfate, from the UK firm, ML Laboratories; PRO-2000 gel, a synthetic naphthalene sulfonate polymer from the US company Indevus Pharmaceuticals; cellulose sulfate from CONRAD, a partnership between the Eastern Virginia Medical School in the US and the US Agency for International Aid (USAID); Carrugard from the Population Council, an international non-profit organization; BufferGel from the HIV Prevention Trials Network (HPTN), a worldwide collaborative clinical trials network, and a vaginal gel known as C31G, developed by US pharmaceuticals company, Biosyn Inc.

Further information on the conference, Microbicides 2004 is available at: <http://www.microbicides2004.org> and further information on microbicides is available at: <http://www.microbicide.org> ■

Fiona Fleck, *Geneva*

scientific journals in the US to peer review and edit manuscripts from countries subjected to the US Government's trade embargo. Since then the government has eased off, apparently leaving publishers free to work on manuscripts from the Islamic Republic of Iran and other embargoed countries.

The relaxing of the ban was signalled by a letter from the US Department of the Treasury on 2 April to a lawyer for the Institute of Electronic and Electrical Engineers — which had stopped accepting papers from embargoed countries — saying that the organization's peer review, editing and publishing was "not constrained" by regulations from the department's Office of Foreign Assets Control.

New SARS scare in China

China has reported two confirmed cases of SARS and six suspected cases since 22 April. Six of these are in Beijing and two, including a fatality, are in the eastern province of Anhui.

Results of investigations to date point to laboratory research at the National Institute of Virology in Beijing as the likely source of the outbreak. The institute has been engaged in research with the SARS coronavirus, including the development of a vaccine. Two of the recently reported cases were conducting research at the laboratory: a 26-year-old female postgraduate student from Anhui Province, and a 31-year-old man.

As of 26 April, almost 1000 contacts of these cases are under medical investigation, including 640 in Beijing and 353 in Anhui. All the cases diagnosed and those under investigation have been linked to chains of transmission involving close personal contact with an identified case.

At the request of the Chinese Ministry of Health, WHO sent the first members of an international team to help investigate the source of the cases on 26 April.

Measles death toll drops

WHO and the United Nations Children's Fund (UNICEF) announced a global reduction of 30% in deaths from measles between 1999 and 2002. In Africa, the region with the highest number of people affected by the disease, the reduction in measles deaths was 35%.

In 1999, some 869 000 people — mostly children — died of measles. In 2002, this figure had dropped to an estimated 610 000 people. According to WHO, the progress indicates that countries can achieve the UN goals of halving global measles deaths by the end of 2005.

Recent progress is due to the adoption by the most affected countries of the comprehensive WHO/UNICEF strategy for sustainable measles mortality reduction. At a WHO/UNICEF meeting in Cape Town, South Africa, in October 2003, Ministry of Health representatives from 45 high-burden countries agreed that this strategy was highly effective in reducing measles deaths.

The estimated annual cost for measles mortality reduction activities in the 45 high burden countries is approximately US\$ 140 million.

First polio case in southern Africa since 1997

Health authorities confirmed a new case of polio in Botswana on 14 April — the first in southern Africa since 1997 — and traced it to Nigeria. The finding jeopardizes progress in the eradication of the disease and has prompted preparations for a nationwide immunization campaign to reach 250 000 children in Botswana.

In the past 18 months, wild polioviruses genetically linked to northern Nigeria have emerged in Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Ghana, Togo and Botswana — all previously polio-free countries.

Circumcision reduces risk of HIV infection in men

Circumcised men may be six times less likely to contract HIV than men who are not circumcised, suggests new research carried out on more than 2000 men in India.

Published in the UK-based medical journal, the *Lancet*, (2004;363:1039-40), the research letter appears to confirm that the thin foreskin tissue on uncircumcised men could be highly prone to HIV infection, giving support to findings from an earlier study in Africa which had already suggested that the circumcision reduced a man's chances of

In brief

US relaxes ban on editing foreign research

Last month the *Bulletin* (2004;82:312) reported on the US trade embargo ruling which made it illegal for publishers of