

Malaria drug resistance

The principal malaria parasite, *Plasmodium falciparum*, develops resistance to three first-line antimalarial drugs when mutations occur in just one gene, say researchers in Australia. Moreover, resistance to a fourth and relatively new antimalarial agent, artemisinin, can be influenced by mutations in the same gene, despite artemisinin being structurally different from the other three drugs.^a

Alan Cowman at the Walter and Eliza Hall Institute of Medical Research in Melbourne and colleagues end a ten-year controversy that has included “fierce debate” with the publication of their findings. The team first isolated the *P. falciparum* *pfmdr1* gene more than a decade ago and suggested it was involved in resistance. “This manuscript proves the role of the mutations in the *pfmdr1* gene,” says Cowman.^b Mutations that affect the protein encoded by the gene, known as P-glycoprotein homologue 1 (Pgh1), prevent the drugs mefloquine, halofantrine and quinine from being concentrated in the parasite, allowing the parasite to grow even in their presence. The researchers also show that the same mutations influence the resistance of the parasite towards chloroquine in some strains and that they affect the sensitivity of the parasite to artemisinin. “This has important implications for the development of resistance to this new antimalarial agent,” says Cowman. Many researchers and physicians had pinned their hopes on artemisinin as an effective alternative to drugs which had met increasingly rapid parasite resistance. But the discovery that malaria-endemic areas now have populations of parasites with decreased sensitivity to artemisinin will reduce those hopes.

The mutations responsible for increased resistance in the *pfmdr1* gene are found among parasite populations in Africa, South America and Asia which suggests that “there is selective pressure for their maintenance and spread”, say the researchers. ■

^a Reed MB et al. Pgh1 modulates sensitivity and resistance to multiple antimalarials in *Plasmodium falciparum*. *Nature*, 2000, **403**: 906–909.

^b Cowman A, personal communication.

Community care not to blame for increased offending among the mentally ill

The widespread shift in industrialized countries towards community care for people with schizophrenia is not responsible for an increased rate of criminal convictions in this group over the past 20 years, researchers conclude. Instead, the rise in convictions has been matched by a similar increase in offending in the general population. Paul Mullen of the Victorian Institute of Forensic Mental Health, in Fairfield, Victoria, Australia, and colleagues studied two groups of people with schizophrenia. The first group had all been admitted for first treatment in Victoria before 1975, when institutional care was widespread, the second in 1985, when community care was “becoming the norm”. Each patient was matched by age, sex and place of residence to a control in the community.

In line with other evidence, people with schizophrenia were more likely than controls to be convicted of most criminal offences, and schizophrenic men who had been admitted in 1985 committed more offences than those admitted before 1975. However, there was a similar increase in offending among the community controls. Schizophrenic patients who had also been treated for substance abuse were responsible for a disproportionately high proportion of the offences recorded in this population. “Increased rates in criminal conviction for those with schizophrenia over the last 20 years are consistent with change in the pattern of offending in the general community,” the authors write.^c “This study strongly suggests that whatever the causes of the greater rates of violent and other offending in those with schizophrenia, it has nothing to do with the introduction of community care, nor does it relate to the closure of the old asylums,” comments Mullen.^d “Whatever else offending in those with severe mental illness indicates, it is not that community care has failed nor that we need to reopen mental hospital beds.” The researchers argue in the paper that mental health services should “aim to reduce the raised rates of criminal

^c Mullen PE et al. Community care and criminal offending in schizophrenia. *Lancet*, 2000, **355**: 614–617.

offending associated with schizophrenia”, but that this will not be achieved by “turning the clock back on community care”. ■

More partnerships to spur vaccine development

WHO and the Joint United Nations Programme on HIV/AIDS (UNAIDS) have set up a joint HIV Vaccine Initiative to increase international cooperation in the development of a vaccine against what is now the single biggest infectious killer worldwide. Jose Esparza, coordinator of the new initiative, says that global research efforts on HIV vaccines must be coordinated because of the large number of viral strains and the increasing number of potential vaccines being tested. In addition, the initiative will broker partnerships between the public and private sectors. “Without these partnerships, a viable vaccine may never happen,” said Esparza in an announcement as the initiative’s Vaccine Advisory Committee met for the first time on 21 February.^e

The WHO–UNAIDS initiative on HIV began just days after an announcement of a new collaboration on malaria, this time by the US National Institute of Allergy and Infectious Diseases (NIAID) and the Malaria Vaccine Initiative (MVI), a programme administered by the nonprofit organization Program for Appropriate Technology in Health. Last year, the Seattle-based organization, better known by its acronym PATH, set up the initiative through a grant of US\$ 50 million from the Bill and Melinda Gates Foundation. Now the MVI has signed a memorandum of understanding with NIAID. MVI’s Director, Regina Rabinovich, says the move is “a critical step... that will allow MVI to have an impact on malaria vaccine research. NIAID offers unparalleled clinical testing sites for malaria vaccines and a growing capability to manufacture sufficient quantities of vaccine for field-testing.”^f ■

^d *Lancet*, press release, 19 February 2000. Available at <http://www.thelancet.com/newlancet/reg/issues/vol355no9204/pressrelease.html>

^e WHO and UNAIDS join forces to launch HIV vaccine initiative. WHO/UNAIDS press release, 21 February 2000.

^f Available at <http://www.who.int/inf-pr-2000/en/pr2000-UNAIDS.html>