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Malaria Parasite Origin in India, Study Could Help Improve Drugs

By Papiya Bhattacharya | Published: 19th June 2014 07:50 AM Last Updated: 19th June 2014 08:41 AM

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BANGALORE: Scientists have traced the origins of the malarial parasite to India. Insights into the origin could help contain the spread of drug-resistant forms of the malarial microbe, says a paper published by a team of Indian scientists. Dr Aparup Das, one of the three authors of the study, told Express, "Genetic diversity arms the parasites to escape new drugs and vaccines easily." The findings of the study have been published in the 'Molecular Ecology' journal.



Malaria is caused by a parasite called Plasmodium, transmitted via the bites of infected mosquitoes. In the human body, the parasites multiply in the liver, and then infect red blood cells. Indian P. falciparum presents high genetic diversity, according to the paper.

Controlling malaria is a challenge, say the authors, because of evolving resistance to anti-malarial drugs in the two principal human malaria parasites, Plasmodium falciparum and Plasmodium vivax.

Frequent human migration between countries facilitates propagation of parasites to newer populations, leading to more drug-resistant parasites.

Das feels the most important aspect of the study is the observation of a single nucleotide polymorphism (SNP) in five (out of 44) mitochondrial genomes of the Indian malaria parasite, so far known to be specific to malaria parasites infecting African primates (such as the gorilla, monkey, and bonobo). This SNP, with two other novel SNPs, is interestingly found in malaria parasites infecting the Indian rhesus macaque.

The finding provides evidence, although preliminary, that the parasites switched hosts (from monkeys to humans) in India.

Das and co-authors Suchi Tyagi and Veena Pande are attached to the Evolutionary Genomics and Bioinformatics Laboratory, National Institute of Malaria Research, Delhi, and Department of Biotechnology, Kumaun University, Nainital.

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Rohan
Wonderful....India shining in modern biological research...I congratulate to the scientists and the ICMR for encouraging such kind of research. Most importantly, the whole work has been conducted in India, without any involvement of foreigners (which is usually the case in most of the studies). Excellent stuff!!!!
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