FIFTH HUMAN MALARIA PARASITE DISCOVERY REWROTE TEXTBOOKS'

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Professor Balbir Singh

KUCHING: The discovery of a fifth human malaria parasite in Kapit in the 1990s rewrote medical textbooks and also changed the way infections are diagnosed.

Universiti Malaysia Sarawak (Unimas) lecturer Professor Balbir Singh said the discovery of Plasmodium knowlesi led to changes in treatment and management policy, which has resulted in lives being saved, especially in Sabah and Sarawak where it is now the most common cause of human malaria.

When presenting the public talk 'Malaria, Man, Monkeys and Mosquitoes' yesterday, Balbir explained that malaria in humans was previously thought to be caused by four species of Plasmodium parasites.

The 61-year-old scientist said investigation on the new species of malaria parasite began in 1991, when atypical malaria records were received from Kapit Division.

"The main cause of human malaria in Sarawak has been P vivax, followed by P falciparum and P malariae," he explained.

“However, in Kapit there were more P malariae cases than P falciparum.”

Adding to the suspicion, malaria caused by P malariae typically results in low parasite counts and is a benign infection that does not normally require hospitalisation.

“But all the cases in Kapit were hospitalised and some patients had high numbers of parasites in their blood,” said the Unimas Malaria Research Centre (MRC) founding director.

Upon re-examination of the blood samples collected, it was found the technologists were misdiagnosing P knowlesi as P malariae because the two parasites looked similar under the microscope.

“The only way to correctly identify each species is by using the molecular detection methods, or DNA tests, that have been developed,” Balbir explained.

The Unimas team then obtained the DNA sequence for the parasite and found it was 99.6 per cent identical to P knowlesi, which is typically found in long-tailed and pig-tailed macaques.

“Due to the rapid multiplication of P knowlesi in the blood, 24 hours compared with 72 hours for P malariae, and the potential to cause severe malaria and death, these patients are now recognised as having knowlesi malaria,” he said.

Some 300 participants attended the talk hosted by the Unimas Faculty of Medicine and Health Sciences.