HH.MED.18

CLINICAL USE OF POLYMERASE CHAIN REACTION BASED DETECTION OF *Leishmania Spp*. IN THE DIAGNOSIS OF CUTANEOUS LEISHMANIASIS

D. N. Atapattu[1], W. M. D. R. Iddawela[1], S. B. Adikari[2], R. P. V. J. Rajapakse[3], W. D. S. J. Wickramasinghe[1], S. S. Samaraweera[4], N. Senevirathne[4], N. Perera[1], D. R. S. Adicaram[1], G. J. K. A. A. Jayawardana[1], D. M. H. N. Dissanayake[1], D. R. L. N. Bandara[1], N. L. S. Wijesundara[1], S. Nugawala[1]

[1]Department of Parasitology, [2]Department of Anatomy,
Faculty of Medicine, University of Peradeniya
[3]Department of Veterinary Pathobiology,
Faculty of Veterinary Medicine and Animal Science, University of Peradeniya
[4]Teaching Hospital, Kurunegala

Sri Lanka is the newest reported focus of leishmaniasis in the Indian subcontinent and since 2001 there have been over 2500 clinically suspected cases referred for disease confirmation. Light microscopy remains the mainstay for diagnosis, but in spite of its wide use, as the sensitivity of microscopy is low, it can result in mismanagement of patients. The objective of this research was to study the clinical use of the polymerase chain reaction (PCR) in the diagnosis of cutaneous leishmaniasis (CL).

The sensitivity of microscopy was compared with PCR amplification using a set of primers that amplified a 260-bp region in the genomic DNA of all old world *Leishmania spp.* The samples (n=31) were collected from patients clinically suspected of CL. The smears were stained with Giemsa and for PCR, DNA was extracted from skin scrapings. A diagnosis of CL was given if at least one of the two techniques produced positive findings.

Of the sample, 64.5% were identified as CL positive by both tests. The sensitivity for microscopy and PCR were 70% and 80% respectively. PCR also detected 35% of the microscopy negative patients. Three patients who had demonstrated negative results when microscopy was repeated and two patients who were undergoing treatment for leprosy were also diagnosed positively by PCR.

The PCR assay had a higher sensitivity for diagnosing CL when compared with microscopy and although time consuming and expensive, it can be recommended in those cases where microscopy is negative and the clinical diagnosis is doubtful.

Funding: University Research Grants: RG/2009/36/M and RG/2011/CG-2/24/M.