Comparative evaluation of diagnosis of post-kala-azar dermal leishmaniasis by qPCR and microscopy in a cohort of kala-azar patients treated with three new treatment regimens

Vishal Goyal1, Vidya Nand Rabi Das2, Krishna Pandey2, Suman Rijal3, Fabiana Alves2, Pradeep Das2, Jorge Alvar1
1. Drugs for Neglected Diseases initiative (DNDi), 2. Rajendra Memorial Research Institute of Medical Sciences (RMRI)

INTRODUCTION
In India, post-kala-azar dermal leishmaniasis (PKDL) cases are a reservoir of Leishmania parasite and may have a major role in anthropocontact transmission of visceral leishmaniasis (VL). Early diagnosis and management of PKDL cases is important for attaining the 2017 VL elimination program target in the Indian sub-continent and for its long-term sustainability. This study was conceptualized to provide evidence to the Indian National Program about the occurrence of PKDL in VL patients treated with new regimens. In India, microscopic examination and molecular tests (PCR/qPCR) are performed only at the VL referral hospital RMRI in Bihar. This study compared the results obtained from quantitative PCR (qPCR) and microscopy for confirmatory diagnosis of PKDL.

RESULTS
Up to 24 March 2017, a total of 1,270 VL treated patients’ data had been analysed. There were 76 (6%) clinical suspected cases, of whom 60 had a positive rK39 test and were referred to RMRI for confirmatory diagnosis. 2 cases were treated earlier for PKDL based on clinical symptoms. In 12 patients, the diagnostic could not be confirmed by either microscopy or qPCR. Diagnosis was confirmed by qPCR for 36/48 patients who had PCR performed (75%), whereas microscopy was positive for 35/60 (58.3%) who had microscopy performed. qPCR was always positive when parasites were seen by microscopy. All confirmed PKDL cases presented macular lesions.

CONCLUSIONS
Preliminary results indicate that qPCR is highly sensitive for PKDL patients, particularly in macular lesions with low parasite density. PKDL is observed in patients after treatment of VL in each regimen. PKDL is a disease of major public health importance post-VL, as it is thought that PKDL could be a reservoir of Leishmania donovani infection and hence transmit VL. Therefore, early diagnosis and management of PKDL is an essential strategy for the goal of elimination of VL from the Indian subcontinent by 2017.

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