Resistance developing in drug treatment for tropical skin disease

October 22 2015

Dermal leishmaniasis is an ulcerous skin disease caused by a tropical parasite, all forms of which can be treated with the drug miltefosine. Researchers from the National Institute of Pathology, Indian Council of Medical Research and Safdarjung Hospital in Delhi studied the responses of 86 patients treated with miltefosine over 18 months that indicated a developing parasitic resistance to the drug, supporting a growing evidence base showing the rise of miltefosine resistance.

The researchers studied 86 patients - all confirmed to have post kala-azar dermal leishmaniasis. Patients were initially treated with 50 mg 3-times daily for 60 days however some patients suffered gastrointestinal side-effects and were changed to a dose of 50 mg of miltefosine twice daily for 90 days. Due to the side effects all patients from 2011 onwards were initiated onto this second regime.The patients were followed for 18 months post-treatment and assessed monthly via a clinical and histopathological examination.

73 patients successfully completed the treatment and were cured. 4% of patients suffered relapse in the first 12 months after treatment, while 15% relapsed in the 18 months following treatment with a higher relapse rate seen in patients on the 60 day treatment regime compared with the 90 day regime. The number of parasites pre-treatment was found to be higher in the patients who later suffered a relapse.

In six of the relapsed cases the researchers tested the susceptibility of the parasites to the miltefosine post-relapse and compared this with

susceptibility of parasites pre-treatment. Following the relapse, parasites were shown to have significantly reduced sensitivity to the treatment, suggesting the development of resistance.

Although all the patients in the study were cured through the use of miltefosine the rate of relapse, along with the reduced drug susceptibility of the parasites following relapse, indicates that the development of drug resistance is a major concern. This indicates a pressing need for the development of new therapies or co-therapies to ensure the continued effective treatment of all forms of leishmaniasis.

Provided by Public Library of Science