Treatment of Cutaneous Leishmaniasis Skin Lesion: A Brief Overview & Future Plan

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ABSTRACT

Human infection with Leishmania parasites which presents several different clinical forms of diseases; Cutaneous Leishmaniasis (CL), the most common form of the disease and Visceral Leishmaniasis (VL) which is the fetal form of the disease. Due to the diversity of epidemiological characteristics, specific to each species and its environment, vector and reservoir controls are impractical, costly and usually requires political commitment and infrastructures beyond the means of the countries suffering most from this disease and as such the disease is expanding to new foci and the incidence rate is increasing in some of the endemic areas. CL is usually a self-healing lesion but leaves a disfiguring scar, which leads to stigma, isolation and barrier to marriage, especially for girls. In case of severe forms of CL such as recidivans and non-healing forms, no efficacious treatment is available. Pentavalent antimonials (Sb+5) have been introduced since 1930s and still is the first-line WHO recommended treatment for all types of CL. Antimonials require multiple injections which are uncomfortable and painful, so full recommended course is not tolerated by most of the patients and resulted in low compliance. The efficacy of antimonials depends upon the Leishmania species and usually is low and resistant is reported. Moreover, Antimonials are contraindicated in pregnancy, heart/ renal failure, hepatic disease and diabetes and accompanies serious side effects, which in the worst scenario, it might cause death if not carefully monitored. CL patients do not need hospitalization, so the cost of treatment is not high, but still is not affordable for most of the endemic areas. Development of safe and efficacious drugs is urgently needed. There is no global interest in drug development against CL, so endemic countries, NGOs and international agencies need to invest. Clinical trials to assess the efficacy of various modalities on leishmaniasis have been carried out in different parts of the world, but mostly suffer from inadequacies related to different issues such as design, sample size, endpoints etc. Currently, in addition to antimonials, several lines of drugs like Ambisome (liposomal form of Amphotericin B), Miltefosine and Paromomycine are available for the treatment of VL but not for CL. So far, therapeutic strategies for CL traditionally have been designed based on using anti-parasitic agents with unacceptable efficacy rate. In this presentation, available treatment strategies will be discussed. It seems that anti-parasitic agents are not fully effective and future plans for drug design for the treatment of CL in addition to anti-parasitic agents needs to include immunomodulators as well as agents, which facilitate ulcer healing.