

Kala-azar elimination efforts in India: A chronicle and challenges**Geetha Mani¹, Raja Danasekaran¹, Kalaivani Annadurai¹**¹Assistant Professor, Department of Community Medicine, Shri Sathya Sai Medical College and Research Institute, Kancheepuram District, Tamil Nadu, India.**Correspondence** : Dr. Geetha Mani, E mail: drgeethamc@gmail.com**Abstract:**

Kala-azar (KA), the dreadly visceral form of Leishmaniasis is fatal if untreated. India alone accounts for 50% of the global burden. Though India's endeavours against KA date back to 1991, KA control and elimination has eluded us so far. Considering the high KA burden and its health and socioeconomic implications, India has accelerated its efforts to achieve KA elimination by 2015, which has been summarised in this paper.

Key words : Kala-azar; elimination; India

Dear Editor-in-Chief,

Kala-azar (KA), meaning "black sickness" or "deadly disease" in Assamese,^[1] is the most severe visceral form of Leishmaniasis and one among the world's neglected tropical diseases (NTD).^[1] It affects the poorest, most vulnerable and remote population, with a high degree of fatality if untreated.^[1] The disease is endemic in 98 countries; with approximately 500000 people suffering from KA.^[2] KA is the second major parasitic killer after malaria^[1,3]. Five countries namely India, Bangladesh, Nepal, Brazil and Sudan share 90% of global KA burden.^[2] Three of above countries are in South-East Asian Region (SEAR) where an estimated 200 million are at risk.^[2] India alone accounts for 50% of the global burden of KA.^[3]

Early KA control efforts in India dates back to 1991.^[3] Kala-azar control programme was launched in 1992.^[3] Various factors favour KA elimination in India: Man is the only reservoir (anthroponotic) unlike the zoonotic form of KA in Mediterranean and Middle East regions; Phlebotomus argentipes is the only vector; KA is localised in 54 endemic districts across 4 states and effective field-based diagnostic kit and safe drugs are available.^[3,4] But review of past efforts reveal that the burden of KA and the control efforts are complicated by various social factors such as poverty, poor nutritional status, increased population movements, civil conflicts and warfare, ecological changes that increase human contact with sand fly vector, prevalence of HIV infection, parasite

resistance to antileishmanial drugs, inadequate access to healthcare and treatment.^[1,3,4]

National Health Policy (2002) deadline for KA elimination was extended from 2010 to 2015.^[3] The tripartite (India, Bangladesh, Nepal) Memorandum of Understanding (MoU) in 2005, called for aggressive action to reduce KA incidence to less than 1 per 10000 inhabitants per year in endemic areas at sub-district level by 2015.^[4] Between 2008 and 2014, India has recorded 72.5% reduction in the number of cases and 92.7% reduction in the number of deaths.^[5] With the reporting of sporadic cases in Bhutan and Thailand, these countries have joined India, Bangladesh and Nepal in signing another MoU in September 2014 for collaborated efforts to eliminate KA in the respective countries.^[6] Following strategies were recommended: improving access to early diagnosis and treatment; stronger disease and vector surveillance and integrated vector management with strong emphasis on environmental improvement, social mobilization, research and networking.^[6]

Following the MoU, the Government of India released a National Roadmap for KA elimination (NRKE) by 2015 with specific emphasis on coordinated active and passive case search, notification of all cases of KA, use of low-cost indigenous diagnostic kit developed by Indian Council for Medical Research (ICMR), supply of synthetic pyrethroid for house-spraying in endemic areas and administration of single dose liposomal Amphotericin B (LAmB) for all positive patients.^[3,7]

All these activities are being implemented through the comprehensive programme- the National Vector-Borne Disease Control Programme (NVBDCP).^[3]

Table 1 summarises the recommendations by NRKE, proposed under classified strategies to eliminate KA by 2015.

Table 1 : Proposed Strategies and recommendations under NRKE to eliminate KA by 2015^[3]

Strategies and recommendations
<p>Improving access to early diagnosis and treatment^[6]</p> <p>A standard case definition and uniform diagnostic and management protocol has been recommended^[3]</p> <p>Training health workers and utilizing their services in fever case screening</p> <p>LAmB is the drug of choice; but depending on availability of drugs and administering personnel, the following drugs could be used in order of preference: single dose LAmB, Miltefosine+Paromomycin, Amphotericin B emulsion, Miltefosine, Amphotericin B deoxycholate in multiple doses^[1,4,5]</p> <p>All probable cases of Post-KA Dermal Leishmaniasis (PKDL) to be identified, tested and treated</p> <p>Specific guidelines prescribed for PKDL, special conditions like relapse and HIV-KA co-infection</p> <p>Strengthening drug stock monitoring and cold chain maintenance</p> <p>Strengthening of referral systems</p> <p>All children, adults and pregnant women with KA covered under appropriate available health schemes and treatment services provided free of cost</p> <p>All hospitals instructed to strictly adhere to National Pharmacovigilance protocol</p>
<p>Stronger disease and vector surveillance^[6]</p> <p>Line listing of cases to identify 'hot-spot' areas (villages reporting 5 or more cases in current or previous year)</p> <p>House-house search in hotspot villages</p> <p>Screening of neighbourhood houses and contacts of index case</p> <p>House-house search as part of other national campaigns</p> <p>Regular refresher orientation programmes for doctors and health personnel to maintain high degree of suspicion</p> <p>Securing information from private sector</p> <p>Utilization of immunization, anganwadi and school health services to identify KA cases among children</p> <p>Surveillance of KA-HIV cases</p> <p>Long term follow-up of KA (6 months) and PKDL (12 months) patients</p>
<p>Integrated vector management with emphasis on environmental improvement^[6]</p> <p>Indoor Residual Spraying (IRS) to limit sand fly population for all houses and cattle sheds in villages with KA cases in previous 3 years; twice a year in rounds of two months each depending on the entomological surveillance data^[4]</p> <p>Housing schemes targeting underprivileged families to provide assistance to construct pucca (concrete) houses in endemic villages to reduce sand-fly population and thereby interrupt KA transmission (e.g. Indira Awaas Yojana)^[7]</p> <p>Involving health and all related sectors in maintaining sanitation, hygiene and healthy environment in and around KA affected villages</p>
<p>Social mobilization^[6]</p> <p>Intensive awareness campaigns among the at-risk population, about the disease, the fatality if untreated, prevention and treatment options, existing schemes and incentives</p>

<p>Observing KA fortnight (an awareness drive in endemic areas once a year)^[4]</p> <p>Community voucher scheme</p> <p>Training of ASHAs and village health nurses to impart awareness, case-identification and mobilization to health care with appropriate incentives^[4]</p> <p>Engaging private sector in providing awareness, diagnostic and treatment facilities under public-private partnership</p>
<p>Research and networking^[6]</p> <p>Involvement of National and International partners such as for situational analysis, training human resources, policy advice, operational research activities, monitoring of IRS activities, cross-border monitoring and surveillance</p> <p>Research into clinical drug trials</p>

The path to achieve the goal of improving health status of vulnerable population in endemic areas by elimination of KA is not without roadblocks. KA affects remote, hard-to-reach population making community-based surveillance and follow-up efforts difficult.^[1, 4] The main challenges are poverty and ignorance about the disease, its etiology and complications, inadequate health education and community participation, poor health-seeking behaviour among patients with PKDL, who may not be seriously ill and therefore not seek treatment but serve as a significant reservoir for human transmission.^[1,3,4]

A multi-pronged approach is needed to rise above these challenges. An updated epidemiological information system is necessary to monitor progress towards elimination. Kala-azar has been made a notifiable disease in India.^[7] All doctors in public and private sector should be sensitized to the notification process.^[7] Strong political commitment is required to raise the funding for KA research and control activities.^[8] Multi-stakeholder engagement should be sought with involvement of national and international agencies.^[4,8] Successful elimination requires active community participation.^[1,4] Coordinated activities should be implemented at community level to promote preventive measures such as elimination of breeding places of sand-flies, locating cattle shelters at fair distance from residences, construction of improved pucca houses, use of fine-mesh, insecticide-treated bed nets and maintaining general sanitation.^[1, 3, 4] Community health education activities should focus on prevention of stigma and discrimination among

people to improve health-seeking behaviour.^[8] Concluding, the targeted efforts against KA in India has substantially reduced KA burden through the years and with appropriate implementation could potentiate progress to elimination by 2015 and thereby mitigate poverty and strengthen national health.

References:

1. World Health Organization (WHO). Leishmaniasis Fact sheet dated January 2014. Accessed at <http://www.who.int / topics / leishmaniasis/en/> Accessed on January 26, 2015.
2. World Health Organization (WHO). Global Health Observatory. Leishmaniasis- Situations and trends. Available at http://www.who.int/gho/neglected_diseases/leishmaniasis/en/ Accessed on January 27, 2015
3. Directorate of National Vector borne Disease control programme, Ministry of Health & Family Welfare, Government of India. National Roadmap for Kala-azar elimination, August 2014. New Delhi, India. Available at http://nvbdcp.gov.in/Doc/Road-map-KA_2014.pdf Accessed on January 20, 2015
4. Soni P, Mishra R, Kumar G, Pandey P, Kumar P. Kala-Azar Elimination in Bihar: Adoption of Newer Evidence-based Strategies Required for Elimination. Middle-East Journal of Scientific Research. 2013; 17 (9): 1220-1227
5. Government of India, Ministry of Health and Family welfare. National Vector Borne Disease Control Programme. Kala-azar. Available at <http://nvbdcp.gov.in/ka-cd.html> Accessed on January 27, 2015
6. World Health Organization (WHO). Regional Office for South-East Asia. Health Ministers commit to eliminating kala-azar. Available at <http://www.searo.who.int/mediacentre/releases/2014/pr1581/en/> Accessed on December 27, 2014
7. Press Information Bureau, Government of India, Ministry of Health and Family Welfare. Revised strategy for Kala Azar eradication launched. Dated September 2, 2014. Available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=109265> Accessed on December 27, 2014
8. Narain JP, Dash AP, Parnell B, Bhattacharya SK, Barua S, Bhatia R, Savioli L. Elimination of neglected tropical diseases in the South-East Asia Region of the World Health Organization. Bulletin of the World Health Organization. 2010; 88(3): 206-210. Available at <http://www.who.int/bulletin/volumes/88/3/09-072322/en/> Accessed on December 22, 2014