

Disease Management in Filarial Lymphedema and Podoconiosis – Possibilities for Integration?

Session Date: Saturday, November 4

Session Time: 1:00pm – 4:00pm

Session Location: Severn II

Session Description: Disability Management is the 2nd pillar recommended by WHO for elimination of LF as a public health problem, and it is also an inherent goal if SDG#3.8, Universal Health Coverage, is to be achieved. The goal of this session is discuss common strategies and differences on LE management of filarial and podoconiosis origin from 3 LE-endemic countries, implementing the consortium programme “Tackling obstacles to Eliminate Filariasis and podoconiosis in Africa” (TAKeOFF), in collaboration with the USAID-supported Ledoxy trial consortium.

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KEY DISCUSSION POINTS

Background

Globally, tremendous progress has been made in the control of lymphatic filariasis (LF) through mass drug administration, however, there is a lack of progress on improvement of management for lymphedema (LE) secondary to LF. Podoconiosis is a non-filarial lymphedema found in the volcanic highland zones of Africa, Central and South America, and North-Western India due to exposure to irritant minerals found in red clay soil of volcanic origin. Morbidity management programs for NTDs need to be prioritized to fully achieve the sustainable development goals. Due to similar clinical presentation and geographic overlap between these two conditions, several opportunities exist to realize synergies between programs that manage LF and podoconiosis.

Previous Results with Doxycycline

Beyond its antibiotic activity, doxycycline has anti-inflammatory and anti-(lymph-)angiogenic properties as well as the ability to affect many cellular functions, making it a promising candidate for treatment of lymphedema in addition to classic hygiene management. Previous studies suggest that doxycycline improves filarial lymphedema in patients independent of LF-infection status (Debrah *et al*, 2006; Mand *et al*, 2012). The results from 119 lymphedema patients in Ghana showed that among patients with mild to moderate lymphedema, doxycycline improved lymphedema stage and skin texture as well as reduced the number of acute attack episodes. These results were seen independent of the individual’s *Wolbachia* status.

Tackling Obstacles to Eliminate Filariasis and podoconiosis in Africa (TAKeOFF)

The TAKeOFF project is a consortium funded by the German Ministry of Education and Research to improve treatment regimens for morbidity control for filarial and non-filarial lymphedema (podoconiosis) in Africa. The project encompasses 9 work packages across three countries: Ghana, Tanzania, and Cameroon.

The project includes a multi-national, randomized, and placebo-controlled trial to evaluate the impact of doxycycline on lymphedema. This three-armed clinical trial will compare the impact of hygiene in conjunction with (i) doxycycline 200 mg per day; (ii) doxycycline 100 mg per day; and (iii) placebo on filarial lymphedema. Dreyer's lymphedema staging represents the primary outcome of interest and will be measured at baseline, 3 months, 12 months, and 24 months. Secondary outcomes include limb changes (i.e. volume and circumference), acute dermatolymphangioadenitis (ADLA) episodes, and biomarkers (e.g. angiogenic and lymphangiogenic markers).

This project also includes the mapping of podoconiosis in Cameroon. In Cameroon, an algorithm was developed in an attempt to distinguish filarial and non-filarial lymphedema based on clinical presentation and blood markers. This allowed the creation of a lymphedema-corrected map for podoconiosis which were shown to correlate well with environmental suitability maps. Further, the project is supporting several projects in Tanzania, including a project on the use of SMS technology to identify lymphedema patients.

The presenters discussed several critical challenges to scaling filarial and non-filarial lymphedema care including: the need for better estimates of morbidity cases, lack of patient accessibility to care, and the need to systematically understand localized issues, including barriers to care.

KNOWLEDGE GAPS IDENTIFIED

- What are the strategies for shifting from a disease-specific management approach to a disease-agnostic approach to limb care?
 - What are better strategies for estimating the number of cases of filarial and non-filarial lymphedema?
 - How can we better engage the health financing sector to allow for a more integrated approach to financing LF and podoconiosis programs?
 - Is there a need, and if so, possibility of creating a single staging scale to assess both filarial and non-filarial lymphedema (podoconiosis)?
 - How can we create and disseminate integrated standard operating procedures for LF and podoconiosis targeted to medical and paramedical staff?
 - What are the strategies to train and supervise health care workers to provide this care?
- What are the barriers to scaling-up of interventions that are known to be efficacious for managing lymphedema?
- What are the roles for novel therapeutics (e.g. doxycycline) in managing lymphedema?

RECOMMENDED NEXT STEPS

- We need to scale-up approaches that are known to be efficacious for managing filarial and non-filarial lymphedema, in an integrated manner where feasible and reasonable.
 - We need to systematically investigate the barriers to provision of and access to lymphedema management care.

- We need to address the whole patient (e.g. medical, psychosocial, and rehabilitative issues).
- We need to continue to develop novel approaches to better address lymphedema secondary to LF and podoconiosis.
 - We need to continue to explore the pathogenesis of filarial lymphedema and podoconiosis to identify targets for novel interventions.
 - We need to confirm the previous RCTs where doxycycline led to improvement/ halt of progression of filarial LE, in order to allow WHO to draft recommendations including use of doxycycline on top of hygiene. This needs also to be investigated for podoconiosis.