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Implications for annual retesting after a test-and-not-treat strategy for onchocerciasis elimination in areas co-endemic with Loa loa infection: an observational cohort study

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Abstract

Background: A test-and-not-treat (TaNT) strategy has been developed to prevent people with high concentrations of circulating Loa loa microfilariae (>20 000 microfilariae per mL) developing serious adverse events after ivermectin treatment during mass drug administration to eliminate onchocerciasis. An important question related to cost and programmatic issues is whether annual retesting is required for everyone. We therefore aimed to investigate changes in L loa microfilarial densities during TaNT campaigns run 18 months apart.

Methods: In this observational cohort study, we assessed the participants of two TaNT campaigns for onchocerciasis. These campaigns, which were run by a research team, together with personnel from the Ministry of Health and community health workers, were done in six health areas (in 89 communities) in Okola health district (Cameroon); the first campaign was run between Aug 10, and Oct 29, 2015, and the second was run between March 7, and May 26, 2017. All individuals aged 5

years and older were invited to be screened for Loa loa microfilaraemia before being offered ivermectin (unless contraindicated). L loa microfilarial density was measured at the point of care using the LoaScope. All those with a L loa microfilarial density of 20 000 microfilariae per mL or less were offered treatment; in the first 2 weeks of the 2015 campaign, a higher exclusion threshold of 26 000 microfilariae per mL or less was used. At both rounds of the intervention, participants were registered with a paper form, in which personal information were collected. In 2017, we also recorded whether each individual reported participation in the 2015 campaign. The primary outcome, assessed in all participants, was whether L loa microfilarial density was above or below the exclusion threshold (ie, the criteria that guided the decision to treat).

Findings: In the 2015 TaNT campaign, 26 415 people were censused versus 29 587 people in the 2017 TaNT campaign. All individuals aged 5 years and older without other contraindications to treatment (22 842 people in 2015 and 25 421 people in 2017) were invited to be screened for L loa microfilaraemia before being offered ivermectin. In 2015, 16 182 individuals were examined with the LoaScope, versus 18 697 individuals in the same communities in 2017. 344 (2·1%) individuals were excluded from ivermectin treatment because of a high L loa microfilarial density in 2015, versus 283 (1·5%) individuals in 2017 (p<0·0001). Records from 2017 could be matched to those from 2015 for 6983 individuals (43·2% of the 2015 participants). In this cohort, in 2017, 6981 (>99·9%) of 6983 individuals treated with ivermectin in 2015 had L loa microfilariae density below the level associated with neurological serious adverse events.

Interpretation: Individuals treated with ivermectin do not need to be retested for L loa microfilaraemia before the next treatment, provided that they can be re-identified. This adjusted approach will enable substantial cost savings and facilitate reaching programmatic goals for elimination of onchocerciasis in areas that are co-endemic for loiasis.

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Figures

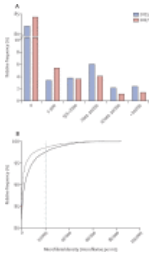

Figure 1 Frequency distribution (A) and cumulative...

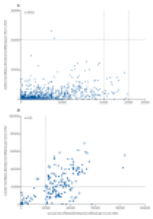

Figure 2 *Loa loa* microfilarial density in...

Comment in

Test-and-not-treat: importance for mass drug administration.

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