World Health Organization

Report on the fourth meeting of the WHO Onchocerciasis Technical Advisory Subgroup

Virtual meeting, 28–29 October 2020

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Abbreviations and acronyms

APOC	African Programme for Onchocerciasis Control
DBS	dried blood spot
DTAG	Diagnostic Technical Advisory Group
FTS	filariasis test strip
LF	lymphatic filariasis
MDA	mass drug administration
NTD	neglected tropical disease
OCP	Onchocerciasis Control Programme
OEM	onchocerciasis elimination mapping
OTS	Onchocerciasis Technical Advisory Subgroup
PCR	polymerase chain reaction
PES	post-elimination surveillance
PTS	post-treatment surveillance
qPCR	quantitative real-time PCR
RDT	rapid diagnostic test
TAS	transmission assessment survey
TPP	target product profile
WHO	World Health Organization

Executive summary

The fourth meeting of the Onchocerciasis Technical Advisory Subgroup (OTS) of the World Health Organization (WHO) was held virtually on 28–29 October 2020. The meeting reviewed some important issues and approved recommendations on (i) the Ov16 enzyme-linked immunosorbent assay (ELISA) for decisions on stopping mass drug administration (MDA) and mapping elimination of onchocerciasis; (ii) integrated evaluations for onchocerciasis and lymphatic filariasis (LF); (iii) country feedback on onchocerciasis elimination; and (iv) updates on the black fly diagnostic initiative, dried blood spot (DBS) rapid diagnostic test (RDT) and on the draft entomological manual for onchocerciasis elimination programmes.

1. Ov16 ELISA for stop-MDA and onchocerciasis elimination mapping

OTS examined comparative data on the Ov16 ELISA from a variety of settings in African countries. These data have been disappointing, although work is still ongoing. No decision was made on the Ov16 ELISA platform, but this should not stop programmes from moving forward with their activities. It was recognized that despite having no recommended ELISA platform, MDA was successfully stopped in over 7.5 million people with the current diagnostic supported by O-150 polymerase chain reaction (PCR).

Recommendations

- Comparison of the evaluations should continue, focusing on performance characteristics, reproducibility of results and logistical feasibility.
- Countries should continue with the ELISA they are already using.
- Entomological evaluations will be key while work continues on the development of ideal serological methods;
- Quality assurance is essential to ensure that programmes can make decisions based on accurate data.

For mapping using Ov16 serology, OTS was unable to recommend a format for onchocerciasis elimination mapping (OEM). However, there was evidence which showed that performing RDT with DBS rather than using fresh blood in the field increases the sensitivity of the Ov16 RDT. Further issues discussed included determination of a lack of transmission, and programmes were advised to conduct exclusion mapping before proceeding to select first- or second-line villages. OTS also deliberated on first- and second-stage sampling methods in OEM, providing the number of villages and adults to be sampled in each stage including the relevant decision-making thresholds.

Recommendations

- Evidence has demonstrated that using DBS increases the sensitivity of the Ov16 RDT, so it is recommended to use the RDT on DBS and to save DBS for future analysis by ELISA.
- Mapping should start in high-risk areas, i.e. in areas with known transmission or with known black fly biting.
- Mapping should begin with exclusion mapping, i.e. in areas where black flies cannot breed or where the environment will not support black flies.

2. Integration of onchocerciasis and LF evaluations

The current WHO recommendations for programmes require that they align the timing of LF and onchocerciasis impact assessments. Where feasible, transmission assessment surveys (TAS) and epidemiological or entomological impact assessments can be conducted together to maximize use of resources and coordinate decisions on stopping treatment. The current challenge is stopping MDA in LF-onchocerciasis co-endemic

areas. OTS discussed ways in which it might be possible to combine LF with onchocerciasis evaluations in pre-TAS or TAS 1, based on the various case scenarios presented.

In areas "known to have onchocerciasis", it was suggested that if LF is ready for pre-TAS, then it would be possible to proceed with an LF/onchocerciasis co-evaluation. There might be one LF sentinel site and one spot-check site, whereby everyone aged above 5 years would be tested, equating to some 300 people at each site. There would be 3–5 onchocerciasis first-line villages, where only 5–9-year-olds would be tested.

In areas "without known onchocerciasis" cases, evaluation would, in step one, determine if a habitat is suitable for black flies. If not, onchocerciasis mapping would not be carried out. The second step would consist of integrated pre-TAS/OEM, whereby one LF sentinel site with everyone older than 5 years would be tested, or five first-line villages with everyone older than 5 years would be tested. There may or may not be LF spot-checks, depending on whether one of the first-line villages could also serve as the LF spot-check site.

OTS discussed a range of issues related to TAS and OEM that focused on selection of villages, pre-stop MDA, stop-MDA and village versus school settings. From the additional country co-evaluation experiences, OTS was able to derive some recommendations that would help programmes to undertake integration.

Recommendations

- In situations where black flies test negative after five rounds of MDA, that another black fly PCR should be repeated before taking a decision to stop MDA.
- Operational research is needed to establish whether five rounds of MDA are enough to eliminate transmission.
- If PCR testing is positive, treatment should be continued.
- Testing of adults should be kept as an option.
- OTS should make the co-evaluation of TAS1/OEM more specific in order to guide programmes in proper decision-making.
- There should be more field studies in the co-evaluation strategy to generate data from a variety of geographical settings, in order to support proper decision-making regarding stop-MDA.

3. Country feedback on onchocerciasis elimination

Feedback on onchocerciasis elimination efforts in African countries was received from the Democratic Republic of the Congo and Uganda. The Ugandan programme raised an issue relating to post-elimination surveillance (PES) not having been performed in most of the foci in the country in which post-treatment surveillance (PTS) has been completed. The Democratic Republic of the Congo had two issues with diagnostic tools, namely