EVIDENCE BRIEF

Preventive chemotherapy for
Lymphatic filariasis
(DCP4 ID: NTD02-04)
Cluster: Neglected Tropical Diseases

FairChoices
DCP Analytic Tool

Preventive chemotherapy for food-borne trematodiases

Authors: Kaur G, Ahmed S, Watkins D, Coates MM, Økland JM, Haaland ØA, Johansson KA

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Description of condition and intervention

Food-borne trematodiases are a group of zoonotic infections comprising of Clonorchiasis, Opisthorchiasis, Fascioliasis and Paragonimiasis disease conditions. These conditions cause public health burden in terms of morbidity and disability, especially the chronic infections. Detection of food-borne trematodiases is done based on clinical manifestations, any history of risk factors (like intake of raw fish, crustaceans or uncooked freshwater plants), presence of eosinophilia, parasitological techniques, immunological tests, and confirmatory findings on ultrasound, computed tomography or magnetic resonance scans. Treatment involves use of anthelminthic medicines. Public health control measures include community diagnosis at district level and implementing population-based preventive chemotherapy in areas with high infectivity.

This evidence brief addresses the effect and cost of preventive chemotherapy for food-borne trematodiases, being analysed in FairChoices: DCP Analytical tool.

International guidelines

Organization	Indications/recommendations
Word Health Organization	Foodborne trematode infections

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Intervention attributes

Type of interventions
Curative

Delivery platform
This intervention may be delivered at the community level.

Equity
In addition to considerations like cost-effectiveness and health systems factors, dimensions of equity can be relevant for priority setting. The opportunity for a long and healthy life varies according to the severity of a health condition that individuals might have, so there are inequities in individuals' opportunities for long and healthy lives based on the health conditions they face. Metrics used to estimate the severity of illness at an individual level can be used to help prioritize those with less opportunity for lifetime health. FairChoices: DCP Analytics Tool uses Health adjusted age of death (HAAD), which is a metric that estimates the number of years lived from birth to death, discounting years lived with disability. A high HAAD thus represents a disease less severe in terms of lifetime health loss, while a low HAAD represents a disease that is severe on average, causing early death or a long period of severe disability. It is also possible to estimate the distribution of HAAD across individuals with a health condition. FairChoices shows for each intervention an average HAAD value of the conditions that are affected by respective interventions that have health effects. Additionally, a plot shows HAAD values for around 290 conditions (Johansson KA et al 2020).

Time dependence
Moderate level of urgency. Treatment outcomes may be affected by some days of delay.

Population in need of interventions
Treated population: All individuals (prevalent cases) of food-borne trematodiases in the age group of 0 to 99 years and gender are eligible to receive the intervention. The treated fraction is assumed to 100% for this intervention.

Affected population: The affected population includes those with the food-borne trematodiases in the age-group of 0 to 99 years, both genders. The affected fraction by this intervention is assumed to be 100%.

Disease states addressed

This intervention targets food-borne trematodiases state.

Intervention effect and safety

Table 1: Effect and safety of preventive chemotherapy of food-borne trematodisases

Effect of intervention		Certainty of evidence
Prevalence	0.39 (relative risk reduction) with the intervention	See appendix

Model assumptions

Table 2: Summary of model parameters and values used in FairChoices – DCP Analytical Tool

Category	**Model parameter**	**Notes**
Intervention	Preventive chemotherapy for food-borne trematodiases	
Cost calculation		
Treated population	Based on prevalence of food-borne trematodiases	Global Burden of disease study 2019
Gender	Both	
Age	0 to 99 years	
Treated fraction	1	
Effect calculation		
Affected Population	Those with condition	
Affected gender	Both	
Affected fraction age	0 to 99 years	
Affected fraction	1	
Comparison	placebo or other care	
Prevalence Reduction (RRR)	0.39	

Intervention Cost

The total unit cost for preventive chemotherapy for food-borne trematodiases per person is estimated to be USD 0.735 (Year: 2013). The unit cost is based on the average cost of delivering Mass drug administration for lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted helminthiases and trachoma (Baltussen et al 2005, Lo NC et al 2015, Stone CM et al 2016).

References

Johansson KA et al 2020: Johansson KA, Coates MM, Økland JM, Tsuchiya A, Bukhman G, Norheim OF, Haaland Ø. Health by disease categories. Distributional Cost-Effectiveness Analysis: Quantifying Health Equity Impacts and Trade-Offs. 2020 Sep 30:105

Baltussen RM, Sylla M, Frick KD, Mariotti SP. Cost-effectiveness of trachoma control in seven world regions. Ophthalmic Epidemiol. 2005 Apr;12(2):91-101. doi: 10.1080/09286580590932761. PMID: 16019692.

Lo NC, Bogoch II, Blackburn BG, Raso G, N'Goran EK, Coulibaly JT, Becker SL, Abrams HB, Utzinger J, Andrews JR. Comparison of community-wide, integrated mass drug administration strategies for schistosomiasis and soil-transmitted helminthiasis: a cost-effectiveness modelling study. Lancet Glob Health. 2015 Oct;3(10):e629-38. doi: 10.1016/S2214-109X(15)00047-9. PMID: 26385302.

Stone CM, Kastner R, Steinmann P, Chitnis N, Tanner M, Tediosi F. Modelling the health impact and cost-effectiveness of lymphatic filariasis eradication under varying levels of mass drug administration scale-up and geographic coverage. BMJ Glob Health. 2016 Apr 6;1(1):e000021. doi: 10.1136/bmjgh-2015-000021. PMID: 28588916; PMCID: PMC5321305.

Appendix

Literature Review for effectiveness & safety

This literature search is an example of a level 1 search of literature and guidelines for preventive chemotherapy for food-borne trematodiases.

Level 1: intervention inputs taken from DCP3 or generated in an ad hoc manner (e.g., quick google search found one study of cervical cancer screening cost-effectiveness that was used to create an effectiveness parameter for that intervention).

Level of evidence of efficacy studies:

1. low (expert opinions, case series, reports, low-quality case control studies)
2. moderate (high quality case control studies, low quality cohort studies)
3. high (high quality cohort studies, individual RCTs)
4. very high (multiple RCTs, metaanalysis, systematic review, clinical practice guidelines)