

Preventive chemotherapy for Trachoma

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

Date: 2021-08-13, 2021-12-03

Description of condition and intervention

Trachoma, caused by bacterium called *Chlamydia trachomatis*, is the leading infectious cause of blindness globally. Spread of infection is from person to person by direct or indirect transfer of ocular and nasal discharges of infected people. The principal reservoir of infection are the preschool-age children. Trachoma is more prevalent in areas with inadequate access to water, sanitation and healthcare, in vulnerable and poor populations living in rural and remote areas. WHO estimates indicate 92 622 people got surgical treatment for advanced trachoma while 95.2 million got antibiotics. This disease is a serious public health problem and can be eliminated using the SAFE strategy. Here, S stands for Surgery to treat trachomatous trichiasis, the blinding stage of the disease; A for Antibiotics to clear infection, particularly mass drug administration of the antibiotic azithromycin; F for Facial cleanliness; and Environmental improvement, particularly better access to water and sanitation (WHO 2021)

International guidelines

Organization	Indications/recommendations
World Health Organization	Trachoma

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 Trachoma 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 Trachoma 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 Trachoma state.

Intervention effect and safety

Table 1: Effect and safety of preventive chemotherapy of Trachoma

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 Trachoma	
Cost calculation		
Treated population	Based on prevalence of Trachoma	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 Trachoma per person is estimated to be USD 0.62 each (Year: 2012). The unit cost was based on the prices of Azythromycin (250 mg capsules) at a price of US\$0.5. and Tetracycline tube price of \$0.12 produced in India (Baltussen et al. 2005).

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.

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 trachoma.

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)

EVIDENCE BRIEF

Preventive chemotherapy for

Lymphatic filariasis

(DCP4 ID: NTD02-04)

Cluster: Neglected Tropical Diseases

FairChoices

DCP Analytic Tool

3. high (high quality cohort studies, individual RCTs)

4. very high (multiple RCTs, metaanalysis, systematic review, clinical practice guidelines)