

# **Efficacy and safety of ascending dosages of tribendimidine against hookworm and concomitant soil-transmitted helminth infections in children: a randomised controlled trial**

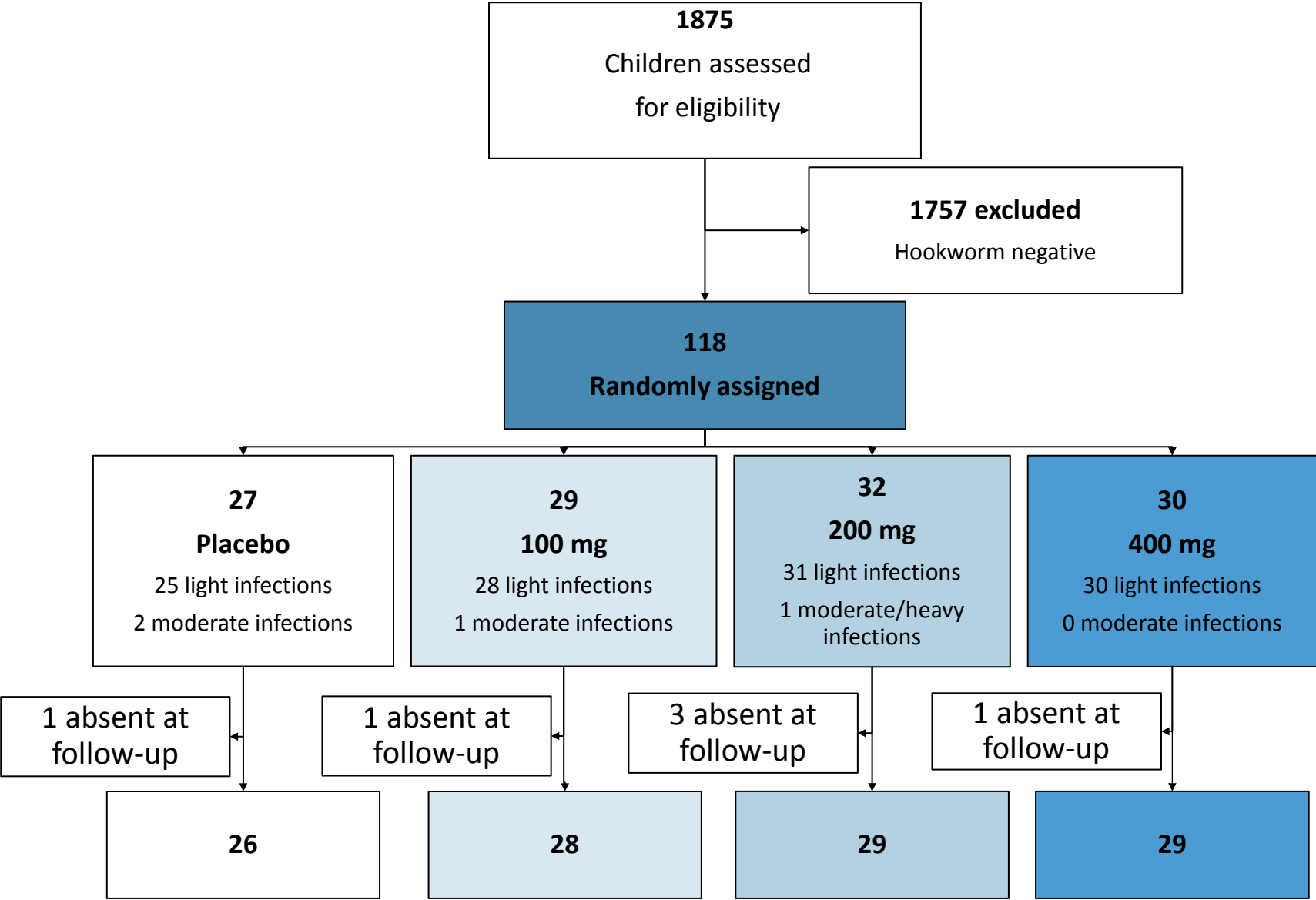
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Basel, 7 December 2017

- The current standard drugs against soil-transmitted helminths, albendazole and mebendazole, have shown excellent efficacy against *A. lumbricoides*, but against hookworm, albendazole has shown only moderate efficacy
- Tribendimidine was developed and approved in China in 2004 after having undergone detailed pre-clinical and clinical studies
- Tribendimidine has an activity spectrum similar to albendazole
  - might serve as a backup drug in case drug resistance against albendazole and mebendazole would emerge
- Dose-finding studies in China in adults revealed a 400 mg dose to be the most suitable to treat hookworm infections
  - 200 mg dose for children was empirically selected
- Up to date, the optimal dose of tribendimidine in children has not yet been identified

## Trial synopsis

Indication	Hookworm infection
Investigational product	Tribendimidine
Study rationale	Provide evidence on effective doses of tribendimidine in children
Study type	Phase 2
Study design	Single blind, randomized, placebo-controlled
Primary endpoint	Cure rate
Secondary endpoint	Egg-reduction rate and safety
Study population	School-aged children (6-12 yr)
Study site	Rubino town and surrounding villages in the Agboville district, southern Côte d'Ivoire
Study schedule	06/2017 of first-participant in 08/2017 of last-participant out





**Stool sample**

2 stool samples before  
and 2 samples after  
treatment



**Kato-Katz**

Preparation of 2 Kato-  
Katz thick smears from  
each stool sample

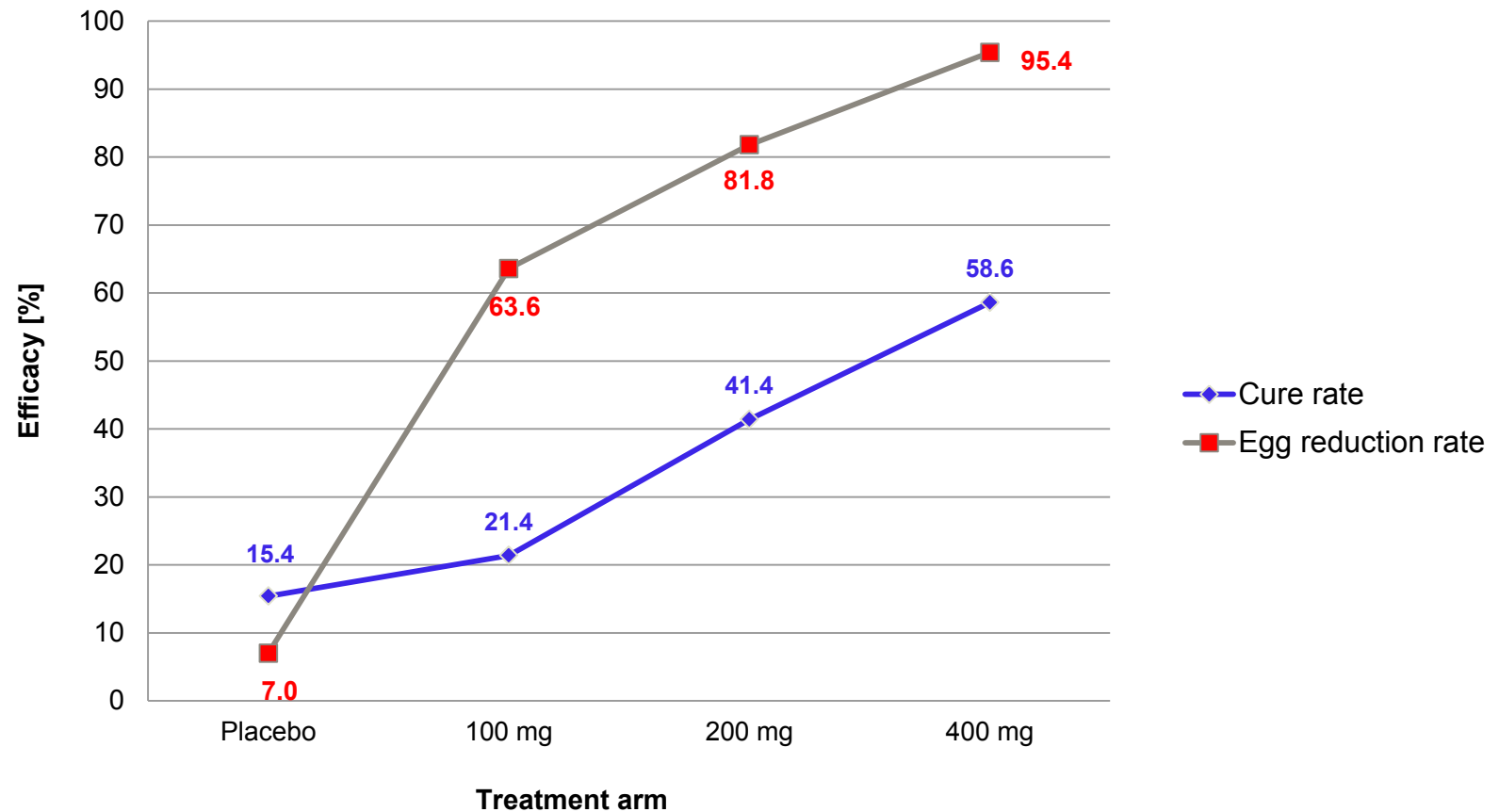


**Kato-Katz thick smears**

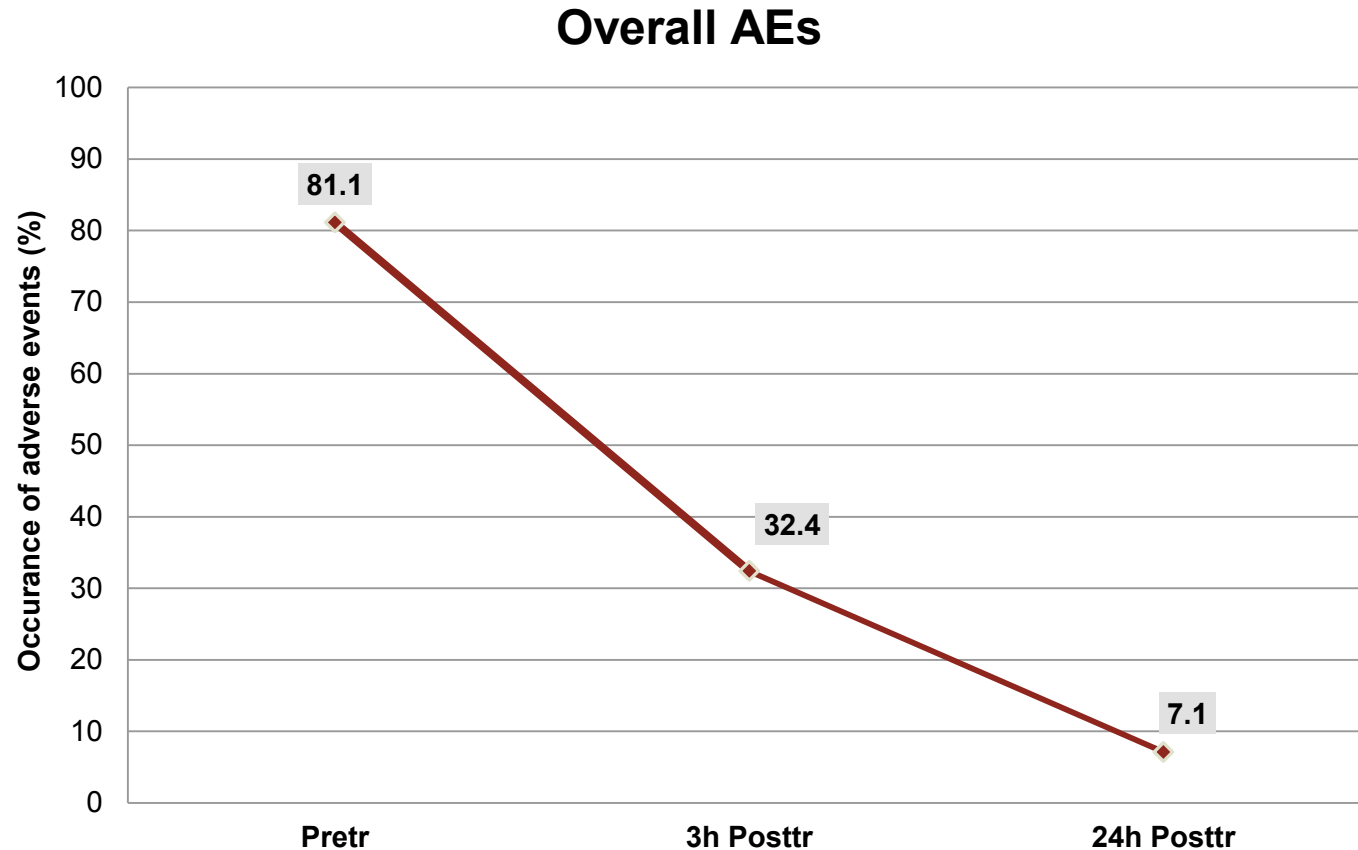
Up to 400 slides per day  
10% re-read for quality  
control

- Overall prevalence of 7.8% in school-aged children

Characteristics	Placebo	100 mg	200 mg	400 mg	Total
	<b>26</b>	<b>28</b>	<b>29</b>	<b>29</b>	<b>112</b>
<b>Female N (%)</b>	10 (38.5)	12 (42.9)	10 (34.5)	7 (24.1)	39 (34.8)
<b>Age, years; median</b>	9	9	9	8	9
<b>Weight, kg; median</b>	27	26	23	22	25
<b>Height, cm; median</b>	131	130	129	123	128
<b>Co-infections N (%)</b>					
<i>A. lumbricoides</i>	1 (3.8)	1 (3.6)	0 (0.0)	0 (0.0)	2 (1.8)
<i>T. trichiura</i>	2 (7.7)	0 (0.0)	2 (6.9)	2 (6.9)	6 (5.4)
<i>S. mansoni</i>	5 (19.2)	2 (7.1)	3 (10.3)	4 (13.8)	14 (12.5)
<i>P. falciparum</i>	13 (50.0)	13 (46.4)	18 (62.1)	19 (65.5)	63 (56.2)



- For the first time a dose-response relationship trial with tribendimidine against hookworm in children was conducted
- A clear **dose-response** was observed



- No difference in mild adverse events seen among treatment arms
- Most commonly observed: thrill, headache, itching, stomach ache, diarrhea
- 1 episode of moderate adverse event, no heavy adverse event

- Acceptable efficacy of tribendimidine against hookworm was observed
- A dose-response relationship was apparent
- Tribendimidine was safe in children, up to the highest dose (400 mg) assessed
- The ongoing Emax model will inform on the dose need for a egg reduction rate of 99%
- Pharmacokinetic part of the study will deepen our understanding of observed cure and egg reduction rates

## Financial source



European Research Council

## Research Institutions

Swiss TPH



Swiss Tropical and Public Health Institute  
Schweizerisches Tropen- und Public Health-Institut  
Institut Tropical et de Santé Publique Suisse

CSRS

Centre Suisse de Recherches  
Scientifiques en Côte d'Ivoire



# Thank you!!!

