Swiss TPH

Female Genital Schistosomiasis in endemic and non-endemic settings

SSTTM, Berne, 2 June 2022

Genital Schistosomiasis

- Definition genital schistosomiasis (female or male, FGS /MGS): affects genital and reproductive organs, eggs or DNA detected in genital tissue or secretions
- Female and male genital schistosomiasis (FGS/MGS): similar pathogenesis, gender-specific clinical presentations
- Urogenital schistosomiasis: Co-existence of urinary (main focus) and FGS
- Exposure and risks: poverty-related factors of NTD's incl. water-dependent domestic chores, livelihoods, behavioural and recreational activities, access to safe water, lack of sanitary infrastructure vs Global travel: eco-tourism and recreational
- Women and girls: gender disparities and inequalities: lower school enrolment and access to preventive chemotherapy (PC) through school-based treatment (SBT)

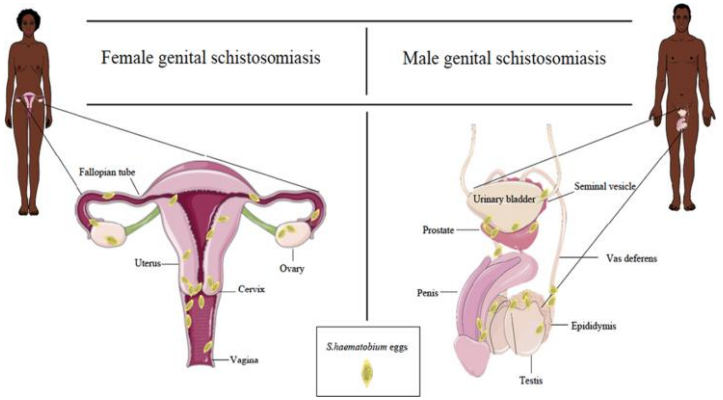
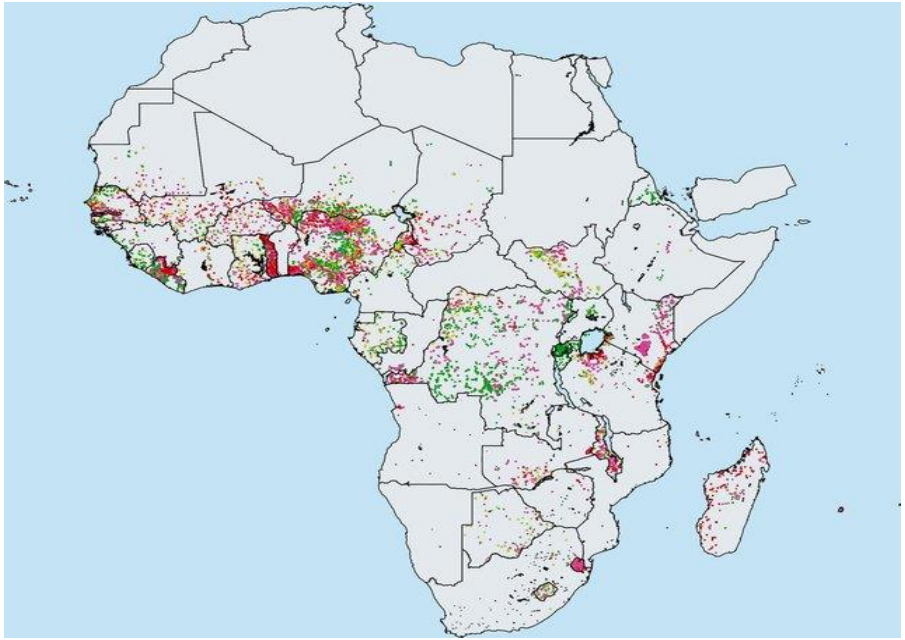


Figure credit *(Bustinduy et al. 2022)*

Epidemiology and geographical distribution

- Geographical distribution of *Schistosoma haematobium (S. h.)* in sub-Saharan Africa (SSA)
- Infections with *S.h.* in women in endemic areas range from 33-75%: stimated 56 million women affected with FGS (*S. h* and *S.m*), true burden of FGS unknown
- Scarcity of epidemiological data on FGS versus broader definition: 54 countries in SSA: Only 20 formal reports on FGS and 17 MGS
- Studies in Niger, Malawi, Zimbabwe (Kjetland, Poggensee 1996, 2005): 75% of women with urinary form had *S.h.* eggs in genital tissues
- Other species:
  - *S. mansoni* (Tanzania: eggs in genital samples; Brazil: leiomyomas, fallopian tubes)
  - *S. japonicum:* prostate involvement in China
  - mixed infections, cross-match or hybrid forms

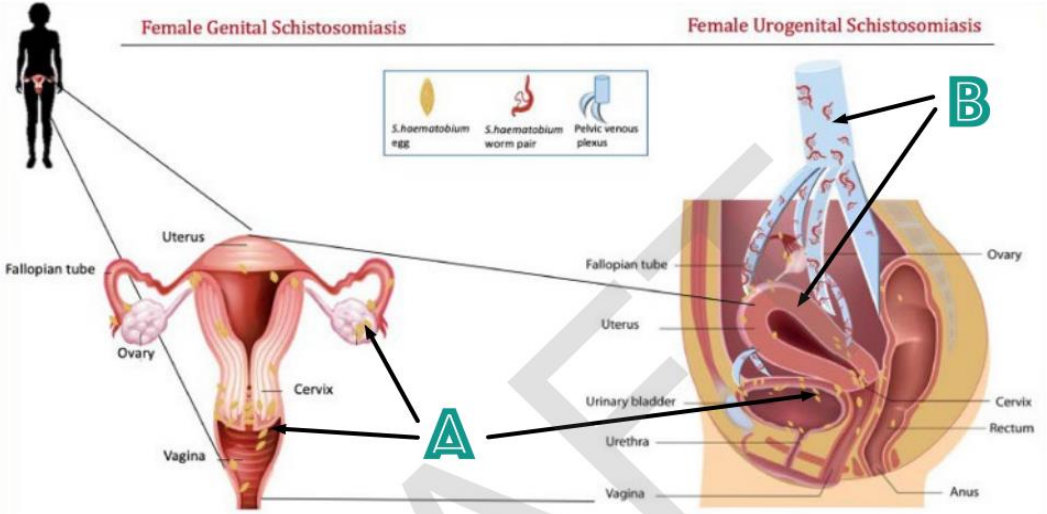


Distribution of S. haematobium in Africa in 2018 Expanded Special Project for Elimination of Neglected Tropical Diseases (ESPEN)

Genital Schistosomiasis: Pathogenesis

- Worm migration patterns and extensive anastomoses of the pelvic venous plexus result in various sites of infection in the genital tract
- Deposition of (immunogenic) eggs in the genital tract and tissue ► inflammatory (granulomatous) responses ► subsequent morbidity and organ dysfunction
- Most commonly affected (viable or calcified eggs): cervix, fallopian tubes, vagina
- all age groups affected (very young children before sexual debut – post-menopause)

Figure 3: Showing female genital and urogenital Schistosomiasis (Sturt et al., 2020)



A. Eggs are deposited in the tissues of the female genital track (vagina, cervix, uterus, fallopian tubes, and ovaries) where they cause inflammation.

B. Adult worms in the blood stream of the woman / girl

Female Genital Schistosomiasis: Pathogenesis

- Clinical course, signs of acute and chronic infection
  - Single or ongoing exposure, with or without previous acute illness (Katayama syndrome), latency in appearance of symptoms and lesions
  - Murine FGS model: Inoculation with viable eggs, development of granulomata after 8 weeks
  - Nemungadi et al: Use of UCP-LF-CAA as indicator for lesions associated with live worms / eggs:
    - Grainy patches and abnormal blood vessels: found more commonly in live worms *S.h.*
    - Yellow sandy patches: chronic damage due to dead eggs

Project SysRef, Goré, Southern Chad
Foto: P. Delcroix

FGS: Clinical symptoms and signs

- Non-specific symptoms, mild or absent
- Signs and symptoms-overlap with sexually transmitted infections (STI's), cervical cancer, urinary tract infections
  - Vulvar or vaginal tumour-like lesions, ulcerations, papillomata, vaginal discharge and itching, lower abdominal and pelvic pain
  - Pain during sexual intercourse (dyspareunia), spontaneous or contact bleeding
  - Irregular menstrual bleeding, secondary sub- or infertility (Sturt et al. BIHIV study Zambia: 2-fold increase in delayed conception) and ectopic pregnancies from adhesions or tubal inflammation
- Impact on mental health from stigmatization, social exclusion, marital discord

Table 1. Findings in community-based studies of genital schistosomiasis in women of reproductive age[a]

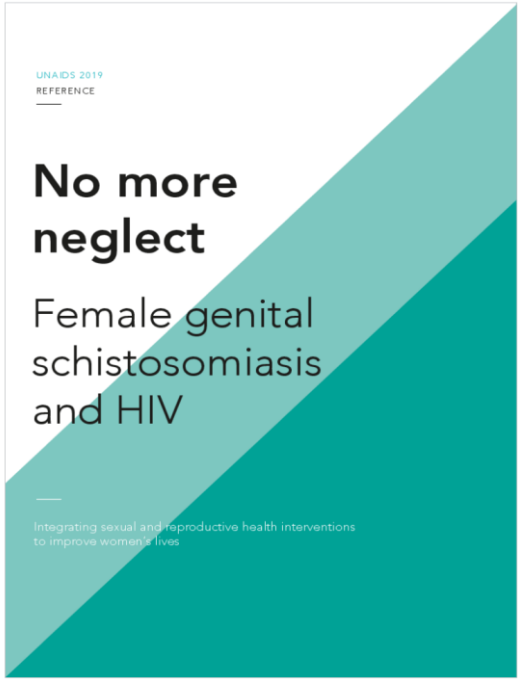
	Zimbabwe[b] [27,34,43]	Madagascar II [38]	Tanzania [28]	Madagascar I [36]	Malawi [37]	Refs.[c]
Number of participants	*n* = 527	*n* = 254	*n* = 434	*n* = 116	*n* = 52	
Symptoms						
Vaginal discharge[d]	S	NS	NS	S	-	[23]
Genital itch	S	-	-	NS	-	[42]
Pain (abdominal / back)	NS	-	NS	-	NS	[39,41]
Pelvic discomfort	-	S	-	S	-	
Pain during sex[e]	NS	-	-	NS[f]	NS	
Bleeding after vaginal sex	NS	-	S	NS	NS	[16]
Spot bleeding	*P* = 0.063	-	NS	-	NS	
Irregular menstruation	NS	-	S	S	NS	[16]
Heavy bleeding	NS	-	S	NS	NS	
Menstrual pain	NS	-	-	NS	-	
Stress incontinence	S	-	-	-	-	
Urge incontinence	NS	-	-	-	-	
Reproductive history						
Primary infertility[f,g]	NS	-	-	NS	NS	[43,44]
Secondary infertility[h]	S	-	-	NS	S	[43,45]
Subfecundity[i]	S	-	-	-	-	
Abortion[j]	NS	-	-	S	NS	[45–48]
Gynecological findings						
Sandy patches in mucosa[k]	S	-	S	-	NS[f]	[10,41]
Abnormal blood vessels[l]	S	-	S	-	NS[f]	[24,39,40]
Contact bleeding	S	-	S	-	NS	[10,16,17]
Edema	S	-	S	-	NS	[17,23]
Erosion	S	-	S	-	NS	
Genital ulcer[g]	NS[m]	-	S	NS	NS	
Malignant-looking lesion	S[m]	-	-	-	NS	[10,16,17,23]
Genital tumor	NS[n]	-	-	-	P=0.08	[10,16,17,42]
Petechiae	NS	-	S	-	-	
Pain on bimanual palpation	NS	-	-	-	NS	

Kjetland et al. A review of female genital schistosomiasis 2012

Co-infections, Co-morbidity

- **FGS and HIV-1:**
  - Geographical overlap of FGS and HIV-1
  - Women and girls more vulnerable and at-risk of acquiring HIV infection (gender inequalities, commercial sex workers, migrant populations)
  - Increased susceptibility for HIV in FGS due to *S.h.,* not in MGS (prostate and seminal vesicles affected, not exposed) due to epithelial damage, target cell recruitment and modulation of co-receptors, vascularity (Downs et al. 2017, Kjetland et al. 2006, Wall et al. 2018)
- **FGS and the role of HPV / cervical cancer development:**
  - *Schistosoma haematobium:* carcinogenic: bladder carcinoma; FGS associated with cervical cancer development
  - Strong association of current FGS infection (PCR-diagnosed) and cervical dysplasia (visual inspection with acetic acid, VIA)

Rafferty et al. Association between cervical dysplasia and female genital schistosomiasis diagnosed by genital PCR in Zambian women, 2021



Maternal Schistosomiasis

- Placenta involvement in schistosomiasis infection
- Chronically infected mothers with nutritional anaemia, protein loss: adverse birth outcomes (stillbirths, prematurity, IUGR, low birth weight)

INFECTION AND IMMUNITY, Mar. 2011, p. 1254–1261 Vol. 79, No. 3
0019-9567/11/$12.00 doi:10.1128/IAI.01072-10

Maternal Schistosomiasis Japonica Is Associated with Maternal, Placental, and Fetal Inflammation▽

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Brief communication

A case report of *Schistosoma haematobium* infection in a pregnant migrant raises concerns about lack of screening policies

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Diagnosing FGS

- **Parasitological sampling and egg visualization** / pros: quantification: intensity of infection, ERR, multiple pathogen detection
  - urine, stool, genital samples (wet / pap smears for cytology): low sensitivity (low prevalence, low infection intensity, variable egg excretion, trapped eggs, decline with age); urine samples: often negative despite genital manifestations
  - **Histopathology from biopsies** (invasive): reference standard (diagnostic method in HIC), direct examination of genital tissue and eggs from (crushed) biopsies; sampling of cervix: concerns of risk of HIV; eggs often clustered in foci and missed
- **Imaging**: ultrasound to assess morbidity and extent (fistulas, tubal obstructions, ectopic pregnancies etc)

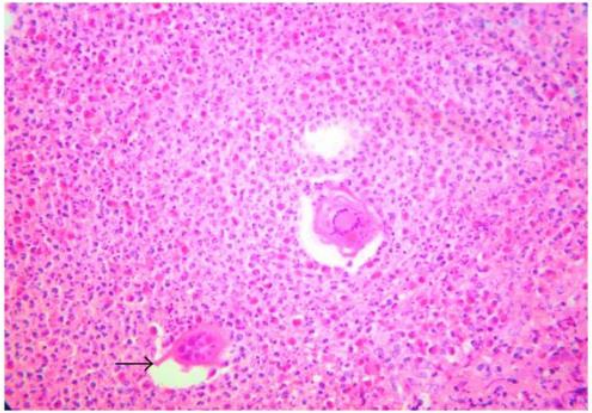


Figure 4

Histology revealed numerous schistosome ova with terminal spines (arrow) characteristic of *Schistosoma haematobium* (Haematoxylin-eosin ×400).

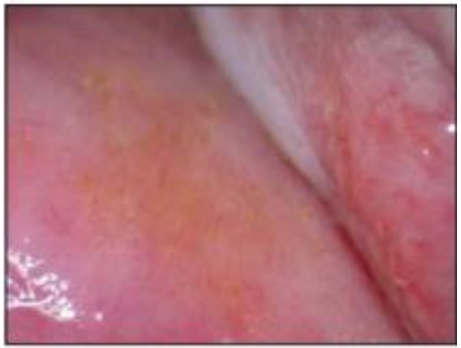
Catteau et al. Genital Schistosomiasis in European Women 2011

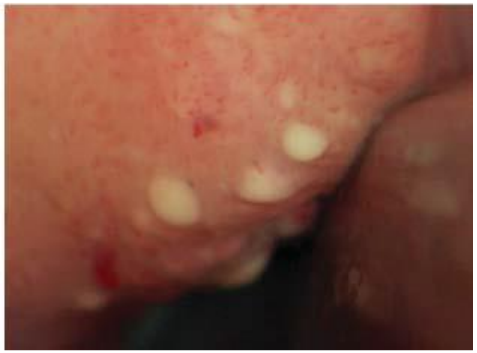
Visual cervical examination and inspection
Colposcopy

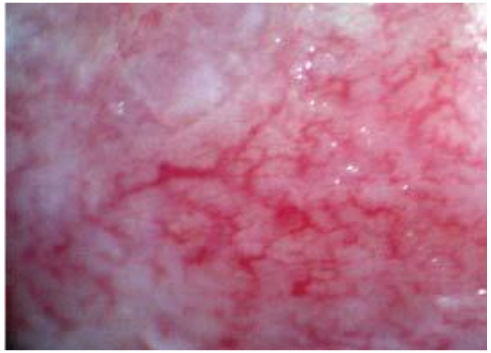
- Visual inspection and detection of lesions in vulva, vagina, cervix (less accessible: Fallopian tubes, uterus)
- Characteristic clinical findings:
  - Grainy sandy patches (grains of rice: single eggs or clusters of eggs) signs of “acute” infections
  - homogenous yellow sandy patches (no grains) associated with chronic infection / fibrosis
  - rubbery papules
  - abnormal blood vessels

https://www.who.int/publications/i/item/9789241509299

Characteristic findings on colposcopy







Distinct findings on colposcopy showing sandy patches (left), rubbery papules (centre) and abnormal blood vessels (right)

Images courtesy of the WHO Pocket Atlas

Colposcopy methods and tools

- Low resource settings: requires specific skills and training, magnification and equipment, infrastructure (electricity, light)
- Alternatives: handheld-colposcopy: cameras, phones (acceptable results)
- Digital tools: Smart Scope (Periwinkle, India: developed as cervical cancer screening device, currently tested for FGS)

Molecular methods

- Real time PCR for DNA detection (single pathogen):
  - high sensitivity and specificity for confirmation
  - Potential test of cure, treatment efficacy and monitoring: Downs et al. dose efficacy SD PZQ: negative parasitology, but 24% remained positive for *S. haematobium* by PCR in urine and CVL, residual genital manifestations
  - Hypotheses: positivity after treatment for months, suboptimal dose, re-infection (endemic areas), post-treatment maturation, products of ova and parasite

- **Genital samples:**
  - Cervicovaginal lavage (CVL): highly specific for diagnosis, less sensitive compared to stool or urine PCR (Pillay et al. 2020) but higher than egg detection in pap smears (cytology)
  - Vaginal and cervical swabs (VSS) self-sampling (less invasive than CVL): sensitivity 80% (BILHIV study, compared to positive DNA in any genital sample), increased sensitivity to 89% in active infection (defined by positive CAA); community-based self-sampling well accepted

Molecular methods for low resource settings and field conditions, point-of-care (POC)

- Alternative to PCR-based amplification: Isothermal (low constant temperature) diagnostic assays: recombinase polymerase amplification assays (**RPA**) for *S. haematobium* and loop mediated isothermal amplification (LAMP): *S. h., S. m., S. j.*
- Highly sensitive (very low infection intensity levels 1-3 eggs/10mL), minimal equipment needs in field conditions and sample preparation; results in < 1hour), RPA: reliable on genital samples (CVL, VSS), urine; portable *on bicycle (Zanzibar low prevalence setting: Steffi Knopp, Bonnie Webster)

Antigen tests and serology

- **Antigen tests (UCP-CAA, (POC-) CCA):** serum and urine
  - indicator for active infection (live worms), proxy for infection intensity (antigen levels)
  - highly sensitive and specific test depending on species
  - Use: low prevalence / elimination settings / treatment monitoring, drug efficacy: clearance within days after treatment
  - **Circulating cathodic antigen** POC-CCA: *S. m.* mapping tool
  - **Circulating anodic antigen** UCP-LF-CAA (single worm infections): serum and modified for urine (non-invasive): *S.j.* (China: screening and control), S. h.: freeBILY study in Gabon: pregnant women and young children in test-and-treat strategy, POC-CAA for *S. h.* currently under development in Kenya (KEMRI)

- **Serology**:
  - screening tool, exposure (travel, asymptomatic populations with risk and history of exposure)
  - post-elimination monitoring / surveillance
  - longevity of antibodies no distinction past-current, prepatent period / time to positivity

- **Indirect methods:** markers of morbidity: urinary dipstick (microhaematuria), fecal occult blood (FOB) and calprotectin, eosinophilia

Treatment of FGS

- WHO: PZQ 40-60mg/kg single dose (SD)
  - different targets for public health and clinical outcomes: morbidity control preventing progression, reduction in worm load, intensity levels (risk of re-exposure and re-infection) vs cure
  - Advocacy and recommendations (CH, German society, CDC and more): successful treatment with higher initial dose and repeated dosing e.g. 40mg/kg/d for 3 days, 60mg/kg/d in split dose D0, repeat D21-30 (endemic areas: re-exposure/infection risk, maturation) (Landry et al.1996, Blum et al.1998, Leslie et al. 1993, Schleenvoight et al. 2014, Alonso, Gryseels)
  - Landry et al. 1996: SD of praziquantel 40 mg/kg not effective (remaining complaints after SD, positive eggs in urine): 3 day course: 40mg/kg/d has been advised for ectopic localizations: no more eggs detected and symptoms disappearance
  - Downs et al. DNA positive urine, CVL 6 m after SD treatment and unresolved macroscopic lesions

Efficacy of single dose and outcomes

SD 40mg/kg assumed as suboptimal, variable indicators for outcome, time intervals, small sample sizes

Table 1 Results of treatment studies on FGS.

Country	N	Outcome measure	Treatment	Time interval	Reduction in outcome measures (%)	Reference
Egypt	13	Primary infertility	Niridazole for 6 days	15 months	46%	El-Mahgoub (1982)
Malawi	9	1. CAA[a]; 2. Complaints[b]; 3. FGS lesions	PZQ single dose (40 mg/kg)	2–9 weeks	1. 80% 2. 34% 3. 50	Richter et al. (1996)
Zimbabwe	≈ 260	1. Presence of FGS lesions[c] 2. Contact bleeding	PZQ single dose (40 mg/kg)	3, 12 months	1. HYSP: 21–36%; GSP: 76% 2. 78%	Kjetland et al. (2006a)
Madagascar	253	Complaints[b]	PZQ single dose (40 mg/kg)	6 months	52–73%	Leutscher et al. (2008a)
Tanzania	33	1. Presence of FGS lesions; 2. Presence of eggs in cervical tissue; 3. Schistosome DNA (vaginal lavage fluid)	PZQ single dose (40 mg/kg)	6 months	1. 67% 2. 100% 3. 80%	Downs et al. (2013)
Zambia	32	1. Presence of FGS lesions; 2. Symptoms	PZQ single dose (40 mg/kg)	12 months	1. 0% 2. 45%	Samuels (2019)

[a]Circulating anodic antigen in serum.
[b]Dyspareunia, genito-pelvic discomfort; pain during sexual intercourse, genital itching and others.
[c]Homogeneous sandy patches (HYSP) and grainy sandy patches (GSP).

Bustinduy et al. An update on female and male genital schistosomiasis and a call to integrate efforts to escalate diagnosis, treatment and awareness in endemic and non-endemic settings: The time is now, 2022

Ongoing studies in Madagascar

- Treatment of Female Genital Schistosomiasis (FGS) With Praziquantel: A Proof-of-Concept Study (2019): RCT to compare standard treatment of schistosomiasis as recommended by WHO (a single dose of praziquantel 40 mg/kg) with a treatment based on a new rationale (5 doses):
  - D1: 1 x 40 mg/kg after enrollment in the study (D1, H0) plus two single doses (40 mg/kg) after 12 and 24 hours after the first treatment
  - W5: 1 x 40 mg/kg 5 weeks following the 1st PZQ treatment
  - W10: 1 x 40 mg/kg 10 weeks following the 1st PZQ treatment

- Outcome measure: disappearance/regression of clinical pathology at the cervix, in the vagina/vulva

Treatment of FGS

- Factors related to treatment efficacy and reversibility of lesions:
  - Previous treatment (PC in regular MDA): beneficial, preventing disease progression
  - Age of patient: Zimbabwe: PZQ before age 20: regression of lesions, less likely to have contact bleeding and sandy patches
  - Intensity of infection, site and degree of alterations: signs and indicators for acute vs late changes

- Maternal schistosomiasis, lactating women: 2 RCT's (Philippines, Uganda): hesitancy, very low uptake of recommendations for PC in MDA in endemic countries vs HIC (individual test and treat)

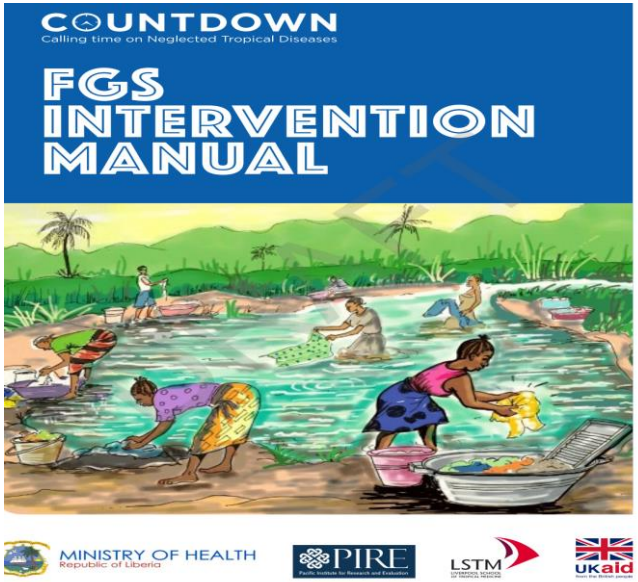
FGS in literature, resources and tools

Ensemble final des compétences pour la Bilharziose génitale chez la femme (BGF)

Compétences pour les professionnels de santé en milieu clinique

1.1 Diagnostiquer la BGF en milieu clinique

#	Qui ?	Fait quoi	À qui?	Dans quel but?	Quand?	Connaissances requises
1.1a	Professionnel de santé	Interroge les femmes et les jeunes filles qui vivent, qui ont vécu ou qui ont voyagé dans une zone d'endémie, sur leur antécédents et sur les facteurs de risque[1] qu'elles ont pu présenter tout au long de leur vie	Les femmes et les jeunes filles qui consultent dans les établissements de santé	Déterminer l'exposition potentielle à la schistosomiase et le risque de BGF	Au cours de chaque consultation médicale des femmes et des jeunes filles si cela est jugé approprié	Comprendre et reconnaître les facteurs de risque de BGF et savoir interroger la famille ou les personnes qui accompagnent les jeunes filles, de fournir un historique des risques potentiels plus précis
1.1b	Professionnel de santé	Pose les questions appropriées sur les symptômes de BGF[2] (pertes vaginales, incontinence urinaire, présence de sang dans les urines, saignements vaginaux irréguliers, saignements post-coïtaux, douleurs abdominales basses, stérilité), ainsi que sur les traitements reçus et leurs résultats dans la pratique clinique de routine	Les femmes et les jeunes filles potentiellement exposées au risque de schistosomiase qui consultent dans les établissements de santé	Déterminer si les femmes et les jeunes filles présentent des symptômes en faveur de la BGF ou la schistosomiase urinaire (bilharziose)	Au cours de chaque consultation médicale des femmes et des jeunes filles si cela est jugé approprié	Comprendre et reconnaître les symptômes de BGF tels que décrits dans l'Atlas de BGF de l'OMS, et reconnaître que l'échec d'un traitement d'IST augmente la suspicion de BGF
1.1c	Professionnel de santé	Se renseigne sur les antécédents et les symptômes conformément aux points 1.1a et 1.1b ci-dessus	Les femmes et les jeunes filles qui sont référées avec des anomalies radiologiques ou histopathologiques	Déterminer où la schistosomiase a pu être contractée afin de localiser les autres personnes à risque qui nécessitent un suivi	Lorsque les patientes sont référées	Comprendre les facteurs de risque et les symptômes de BGF ainsi que leurs manifestations radiographiques et histopathologiques
1.1d	Professionnel de santé	Interroge la patiente sur ses antécédents en matière de traitement d'IST, de dépistage du cancer du col de l'utérus et de vaccination contre le HPV.	Les femmes qui présentent du sang dans les urines, des symptômes cliniques de BGF, ou qui proviennent d'une communauté à	Différencier les diverses maladies qui peuvent présenter des signes et/ou des	Lorsque les femmes qui arrivent à la clinique présentent du sang dans les urines, des symptômes cliniques de FGS, ou	Être conscient que l'échec d'un traitement contre les IST ou le cancer du col de l'utérus peut être un signe de BGF



Jacobson et al. Reproductive Health (2022) 19:20
https://doi.org/10.1186/s12978-021-01252-2

Reproductive Health

RESEARCH Open Access

Addressing a silent and neglected scourge in sexual and reproductive health in Sub-Saharan Africa by development of training competencies to improve prevention, diagnosis, and treatment of female genital schistosomiasis (FGS) for health workers

Julie Jacobson[1*], Anastasia Pantelias[1], Megan Williamson[1,2], Eyrun Floerecke Kjetland[3,7], Alison Krentel[4], Margaret Gyapong[5], Pamela Sabina Mbabazi[6] and Amadou Garba Djirmay[6]

International Journal of Gynecological Pathology
39:301–304, Lippincott Williams & Wilkins, Baltimore

Case Report

Case Study: Schistosomiasis of the Endocervical Canal, A Rarely Reported Localization

Martine Delavy, M.Sc., Josea Lea Heriniainasolo, M.D., Rosa Catarino, M.D., Manuela Viviano, M.D., Patrick Petignat, M.D., and Pierre Vassilakos, M.D.

Research gaps and needs

- Classification of disease and prevention of progression: acute, early signs, precursor vs late manifestations?
- Indirect, non-invasive and syndromic diagnostic methods need exploration
- Efficacy of treatment, dosing and monitoring, outcome measures
- Management of chronic infection / morbidity

Schistosomiasis and FGS in non-endemic settings

Acute Schistosomiasis: A Risk Underestimated by Travelers and a Diagnosis Frequently Missed by General Practitioners—A Cluster Analysis of 42 Travelers

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https://doi.org/10.1007/s15010-019-01270-0

ORIGINAL PAPER

The diagnosis and treatment of urogenital schistosomiasis in Italy in a retrospective cohort of immigrants from Sub-Saharan Africa

Marta Tilli[1] · Federico Gobbi[2] · Francesca Rinaldi[1] · Jacopo Testa[2,3] · Silvio Caligaris[4] · Paola Magro[4] · Dora Buonfrate[2] · Monica Degani[2] · Andrea Minervini[1,5] · Marco Carini[1,5] · Agostino Tuccio[5] · Simone Sforza[1,5] · Maurizio Gulletta[4] · Francesco Castelli[4,6] · Simone Agostini[7] · Filippo Parretti[7] · Joachim Richter[8] · Piero Olliaro[9,10] · Zeno Bisoffi[2,11] · Alessandro Bartoloni[1,12,13] · Lorenzo Zammarchi[1,12,13]

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The European Journal of Medical Sciences

Review article: Current opinion | 22 November 2012, doi:10.4414/smw.2012.13727
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Neglected tropical diseases: diagnosis, clinical management, treatment and control

Jürg Utzinger[a,b], Sören L. Becker[a,b,c], Stefanie Knopp[a,b], Johannes Blum[b,d], Andreas L. Neumayr[b,d], Jennifer Keiser[b,e], Christoph F. Hatz[b,d]

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Schistosomiasis in European Travelers and Migrants: Analysis of 14 Years TropNet Surveillance Data

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RESEARCH ARTICLE Open Access

Schistosomiasis in immigrants, refugees and travellers in an Italian referral centre for tropical diseases

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ORIGINAL ARTICLE

Spectrum of infectious diseases among newly arrived Eritrean refugees in Switzerland: a cross-sectional study

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RESEARCH Open A

Education and information needs for physicians about rare diseases in Spain

Enrique Ramalle-Gómara[1], Elena Domínguez-Garrido[2*], María Gómez-Eguílaz[3], María Eugenia Marzo-Sola[4], José Luis Ramón-Trapero[4] and Josefa Gil-de-Gómez[5]

Rare Diseases

Genital Schistosomiasis After a Missed Diagnosis of Katayama Syndrome

Pierre Landry, Bernard Favrat, and Pierre-Alain Raeber

FGS in non-endemic settings / Switzerland

Summary from «mini-review» on schistosomiasis, FGS, maternal schistosomiasis (mostly case reports, cross-sectional studies):

- Acute schistosomiasis, after malaria and rickettsioses: most common tropical and febrile disease seen in travel medicine in Europe
- Concerns of importation of disease due to vector abundance in mediterranean regions: risk of autochthonous transmission (e.g. Corsica)
- FGS, maternal schistosomiasis
  - Lack of awareness, knowledge and clinical, diagnostic work up, risk assessment
  - Lack of gender-perspective in systematic screening / guidelines addressing genital symptoms and manifestations, screening mothers in view of adverse birth outcomes (case series in Israel)
  - Delayed detection and management: impact on sexual and reproductive health (unnecessary surgical procedures e.g. hysterectomy in woman at childbearing age)

MSc TMIH Project Report

Female Genital Schistosomiasis: Knowledge, Awareness and Practices in clinical settings in Switzerland

Supervisor: Dr Amaya Bustinduy

Objectives

- To explore knowledge and awareness of disease, associated risks and at-risk populations living in non-endemic settings
- To describe current practices in different clinical settings and context
- To identify gaps, barriers and needs for risk assessment, diagnosis, treatment and prevention of disease
- To explore potential tailored approaches or platforms for integration into routine care

Methodology

Qualitative study

- Data collection: Key informant interviews (KII)
  - 9 = Experts (37 requests, 11 accepted, balanced by gender, geography/languages)
  - Expertise and disciplines: health professionals (doctors, nurse) with background in humanitarian, migrant health, Tropical and Travel medicine, pediatrics, STI/HIV consultants, Obstetrics and (Uro-) Gynaecology, clinical work experience in schisto-endemic regions, NTDs
  - Reasons for non-participation: no knowledge (O&G-migrant health services and referral hospital)

- Data analysis: thematic framework

Results

Knowledge on FGS, risk populations and clinical assessment

- Work **experience** in SSA, specialty **training**

SSA:“ Women looked like having cancer and I learnt about FGS there”

- Knowledge, training **gaps** in relevant dusciplines
  - Endemicity e.g. Middle East, Egypt, Philippines, South America
  - Clinical symptoms, signs, associated risks, maternal schistosomiasis
  - Heterogeneity in diagnostic work up
  - Training, resources (Atlas), literature

“Schistosomiasis is relatively well known, digestive and urinary, but the genital, the FGS, I think it’s not so well known”

Results

- FGS perceived as “orphan” disease, rare in Switzerland

- Clinical practice and screening strategies:
  - no systematic screening in O&G: ANC: screening for haematological disorders, eclampsia/hypertension, work-up for haematuria doesn’t include schistosomiasis
  - Limited gynaecological assessment in non-O&G

“I’m trained a bit in tropical medicine so for me it’s just natural to screen”

Results

- Patient communication, history and examination (language and sociocultural factors, gender/diciplines) In non-O&G:

  “questions about intercourse, or dyspareunia, those questions are very delicate”

- Health seeking behaviour, access to care and costs

  “haematuria not always perceived as abnormal”

  “migrants are not coming on a regular basis they usually come when they have severe problems”

Results

- Potential platforms for access, integrated services, socioeconomic factors:

"The sexual health clinics because they have mainly adolescents and post-adolescent women, they have a lot of migrants and they are also targeted for Chagas screening"

"*female sex workers go also to these special kind of services where the sans papiers go, as it's cheaper"*

- Sexual health clinics, family planning
- Migrant healthcare and services (incl. antenatal care services)
- Services for sans papiers e.g. Meditrina

Conclusion

- Symptoms and clinical manifestations:
  - Delayed detection, confounding clinical picture of FGS with STI's
  - Lack of awareness, knowledge, training and clinical guidance in relevant disciplines
  - Current gap in medical curriculum, formal training in relevant disciplines
- Diagnostic challenges in endemic areas
- Gender-perspective in screening / focus on gynaecological history and exam is needed

- Mis-, underdiagnosis and underreporting
- Unknown burden FGS/maternal schistosomiasis in at-risk populations

Suggestions and next steps for integration of FGS and maternal schistosomiasis into routine care and services in Switzerland

- Review of existing strategies for screening for integration / adaptation
  - Gender-perspective of screening inc. gynaecological history and exam (where feasible)

- Develop tailored strategies and guidance in collaboration with relevant stakeholders e.g. working group
  - Communication, formal medical education and training: to increase awareness and knowledge
  - Clinical guidance, resource tools: to improve early detection and disease, clinical management and prevention in routine care and services
  - Data: ? Disease notification and surveillance (laboratory) e.g. Israel

- Feedback, comments and ideas are highly welcome

Swiss TPH

Thank you for your attention

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