



ESQUISTOSOMIASI EN UN PAÍS NO ENDÈMIC: UNA INFECCIÓ DESATESA?

RESULTATS DEL CRIBRATGE COMUNITARI *SCHISTO STOP* A LA ZONA METROPOLITANA NORD

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Programa de Salut Internacional de l'ICS Metropolitana Nord

Servei de Malalties Infeccioses HUGTIP/ Direcció Clínica Territorial de Malalties Infeccioses

Fundació Lluita contra les Infeccions

EPIDEMIOLOGIA (I)

AL MÓN...

- 250 milions de persones infectades
- Una de les principals infeccions negligides (OMS)
- 90% Àfrica subsahariana
- 24% migrants que viuen a Europa
- Càrrega de malaltia global DALYs 3.3 milions d'anys ajustats a la discapacitat

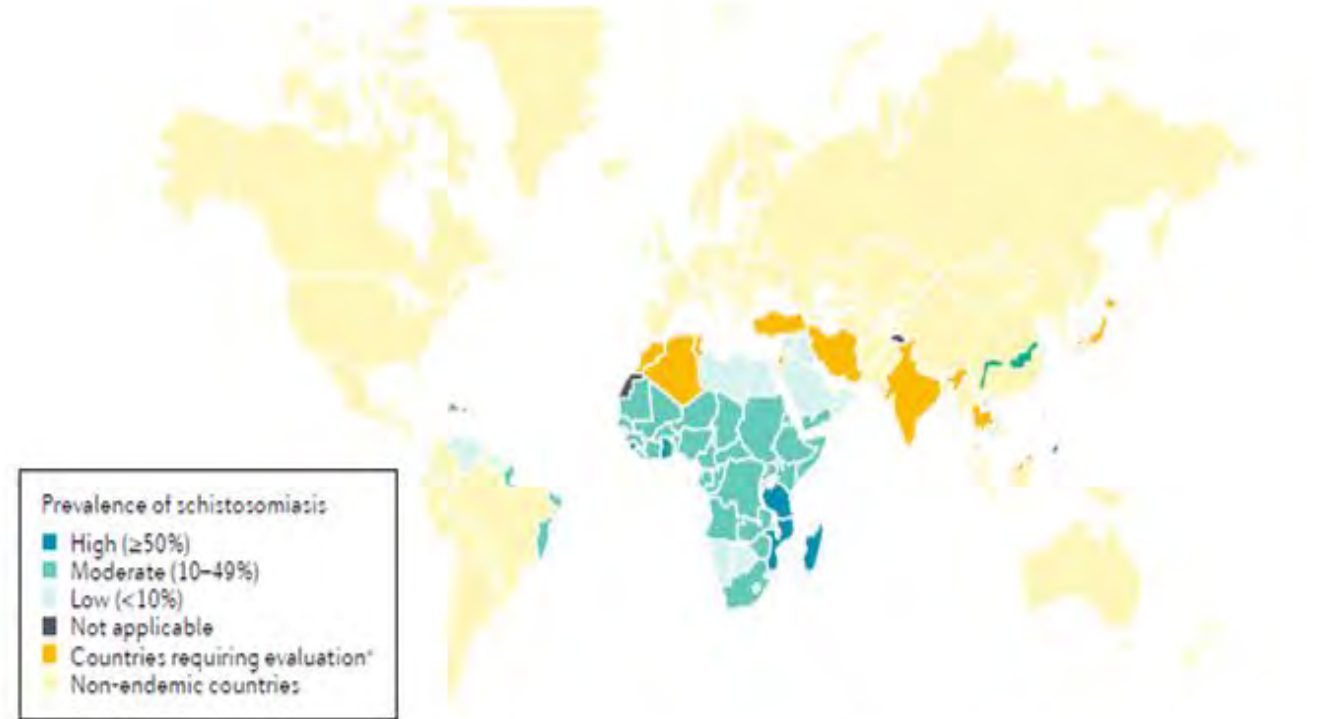


Fig. 2 | Prevalence of schistosomiasis. Worldwide distribution of schistosomiasis in 2012. *Schistosomiasis status needs to be evaluated to verify whether interruption of transmission has been achieved. Figure adapted from Map: Distribution of schistosomiasis, worldwide, 2012, WHO, © 2012.

EPIDEMIOLOGIA (II)

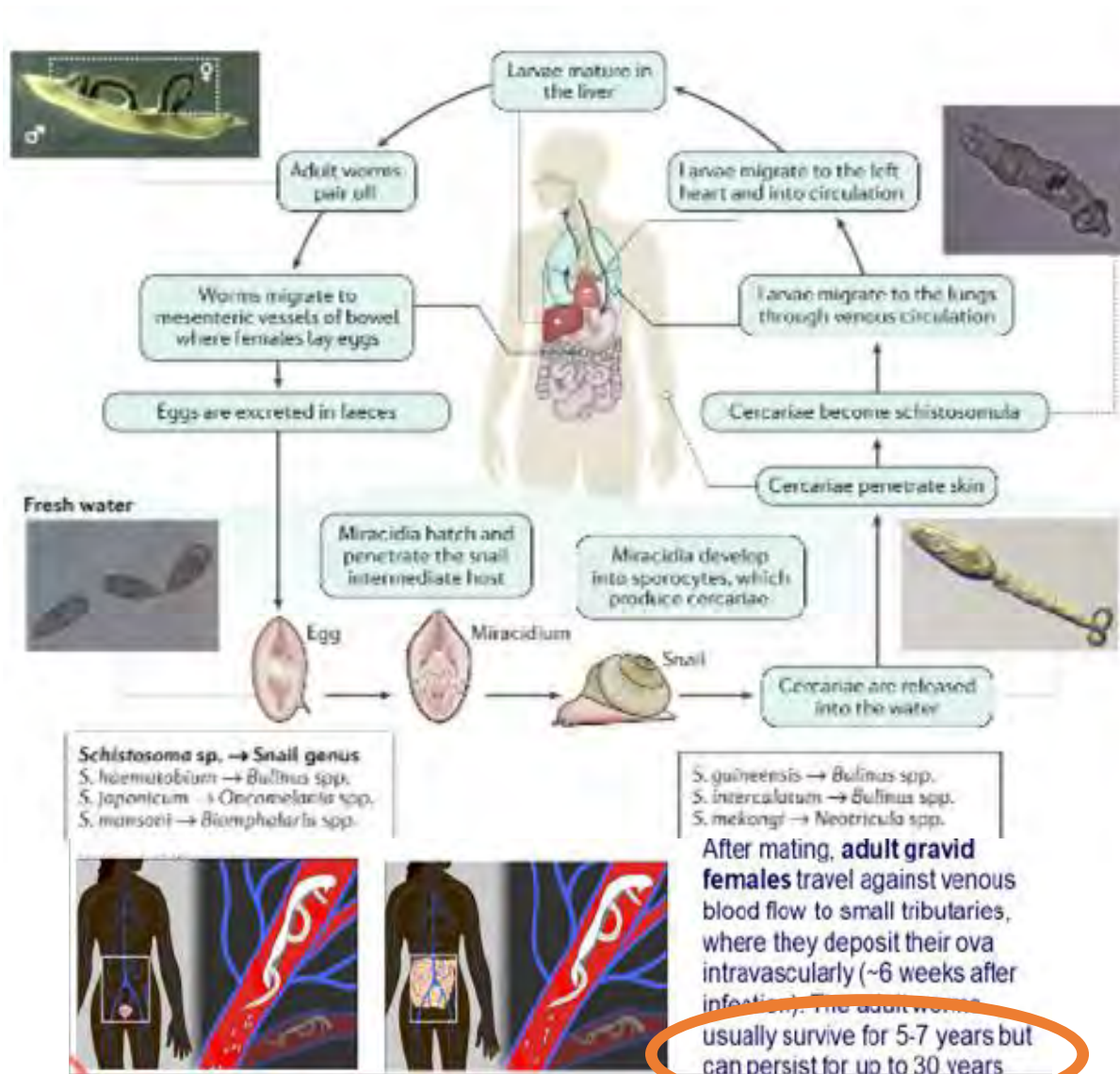


Table 3 Schistosomiasis Signs and Symptoms (WHO, 2016)

System	Signs And Symptoms
Gastrointestinal	Fatigue, abdominal pain, diarrhea, dysentery
Cardiopulmonary	Pneumonitis, cough, wheezing, palpitations, dyspnea on exertion, hemoptysis
Urinary	Frequency, terminal hematuria, dysuria
Central Nervous System	Seizures – focal and generalized, headache, lower limb and back pain, cona medullaris, cauda equina
Female genital	Post coital bleeding, genital ulceration, nodular lesions on cervix, vulva, or vagina, disrupted menstruation, pelvic pain
Male genital	Pain and inflammation of genitals – epididymis, spermatic cord, testes, and prostate gland

Note: Data from WHO.²

COMPLICACIONS CRÒNIQUES

- INSUFICIÈNCIA RENAL
- HTPo-CIRROSI HEPÀTICA
- CA.BUFETA
- ICTUS
- ESQUISTOSOMIASI GENITAL INFERTILITAT
- DISPLÀSIA CERVICAL
- RISC VIH

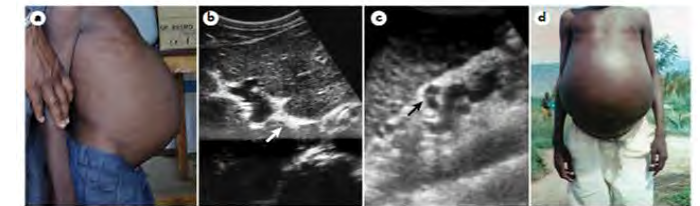


Fig. 4 | Established active and late chronic schistosomiasis. a | Child with established active schistosome infection, with early inflammatory hepatosplenomegaly. b | Fibrosis around the portal vein (arrow) visualized by ultrasonography. c | Esophageal varices (arrow) visualized by ultrasonography. d | Severe late chronic fibrotic disease increased portal pressure and ascites in a young adult man. Image in part a courtesy of N. Kabatereine, Imperial College London, UK. Image in part b reproduced from Oxford Textbook of Medicine 5th Edition edited by Warrell, Cox, and Firth (2010) Figs.7.11.1.9. By permission of Oxford University Press. Images in parts c and d courtesy of B.J. Vennervald, University of Copenhagen, Denmark.

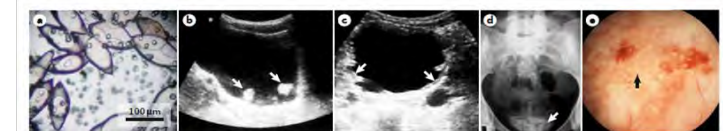


Fig. 5 | Urogenital schistosomiasis. Active *Schistosoma haematobium* infection, with egg excretion in urine (parts a-c), and late chronic infection, with calcified eggs (parts d and e). *S. haematobium* eggs on a nucleopore filter after urine filtration (part a). Urinary bladder wall polyps (arrows) visualized by ultrasonography (part b). Dilatation of ureters and bladder wall thickening (arrows) visualized by ultrasonography (part c). Radiography picture showing bladder calcifications (arrow; part d). Cystoscopy showing yellow sandy patches with calcified *S. haematobium* eggs (arrow; part e). Images in parts a, c and d courtesy of M. Sacks, Institut National de Recherche en Santé Publique, Mali. Image in part b reproduced from Oxford Textbook of Medicine 5th Edition edited by Warrell, Cox, and Firth (2010) Figs.7.11.1.6. By permission of Oxford University Press. Image in part e reproduced from REF.19, Springer Nature Limited.

ESQUISTOSOMIASI GENITAL

- Comú por *S.haematobium*
- EGF 33-75% dones infectades → 40 milions en el món



FGS leads to **infertility** and can increase the risk of **HIV infection**.



FGS leads to stigma, as symptoms are similar to those caused by sexually transmitted diseases; and to social exclusion due to infertility, marital discord and depression.



FGS is underdiagnosed, with serious implications for women's reproductive health.



FGS occurs in **up to 70% of women** infected by schistosomiasis.

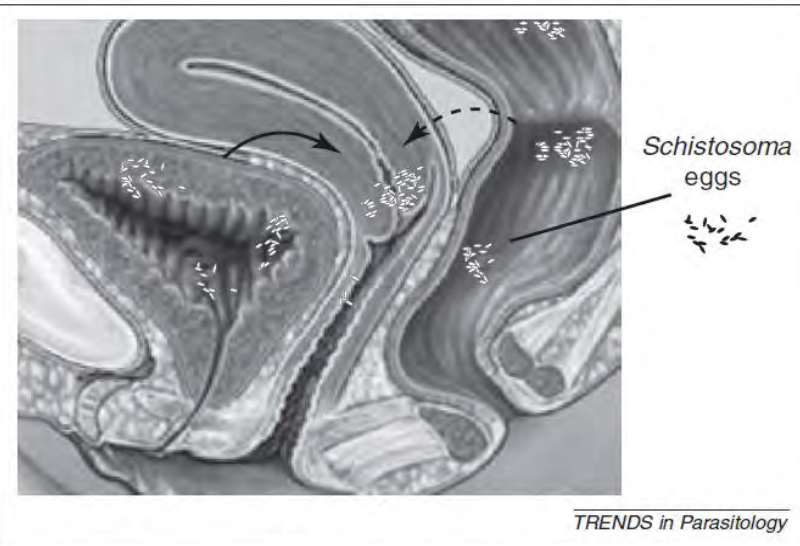


Figure 2. Urinary, genital and intestinal tracts of a schistosomiasis-infected woman. Schistosomiasis eggs are transmitted to the genital tract through blood vessel anastomoses in the pelvic organs. It is possible to have genital *S. haematobium* without involvement of the urinary tract, probably due to individual blood vessel patterns, blood flow and worm localization [27,81]. *S. mansoni* (intestinal schistosomiasis) is sometimes also found in the genital tract.

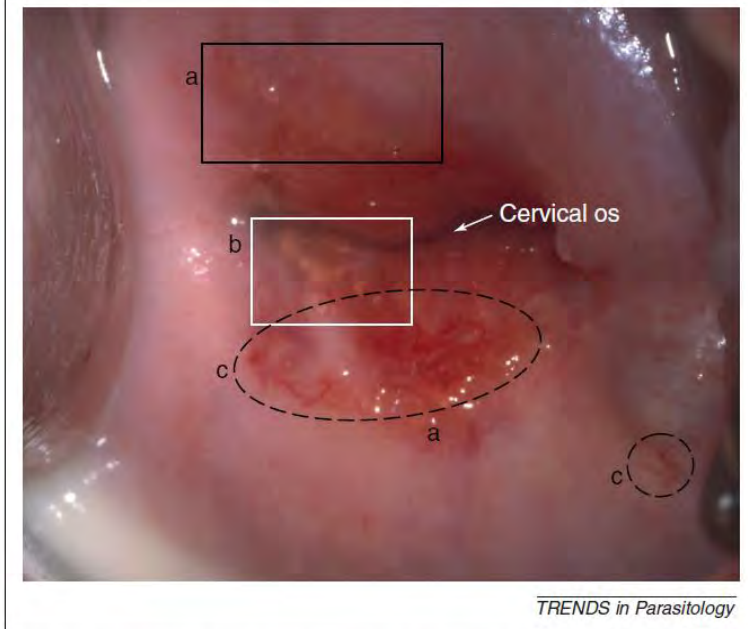


Figure 4. Sandy patches and abnormal blood vessels typical of female genital schistosomiasis. Sandy patches are visible by colposcopy and sometimes by the naked eye. The cervical os (mouth) is the opening of the cervix into the uterine cavity. Sandy patches and abnormal blood vessels may be situated both within

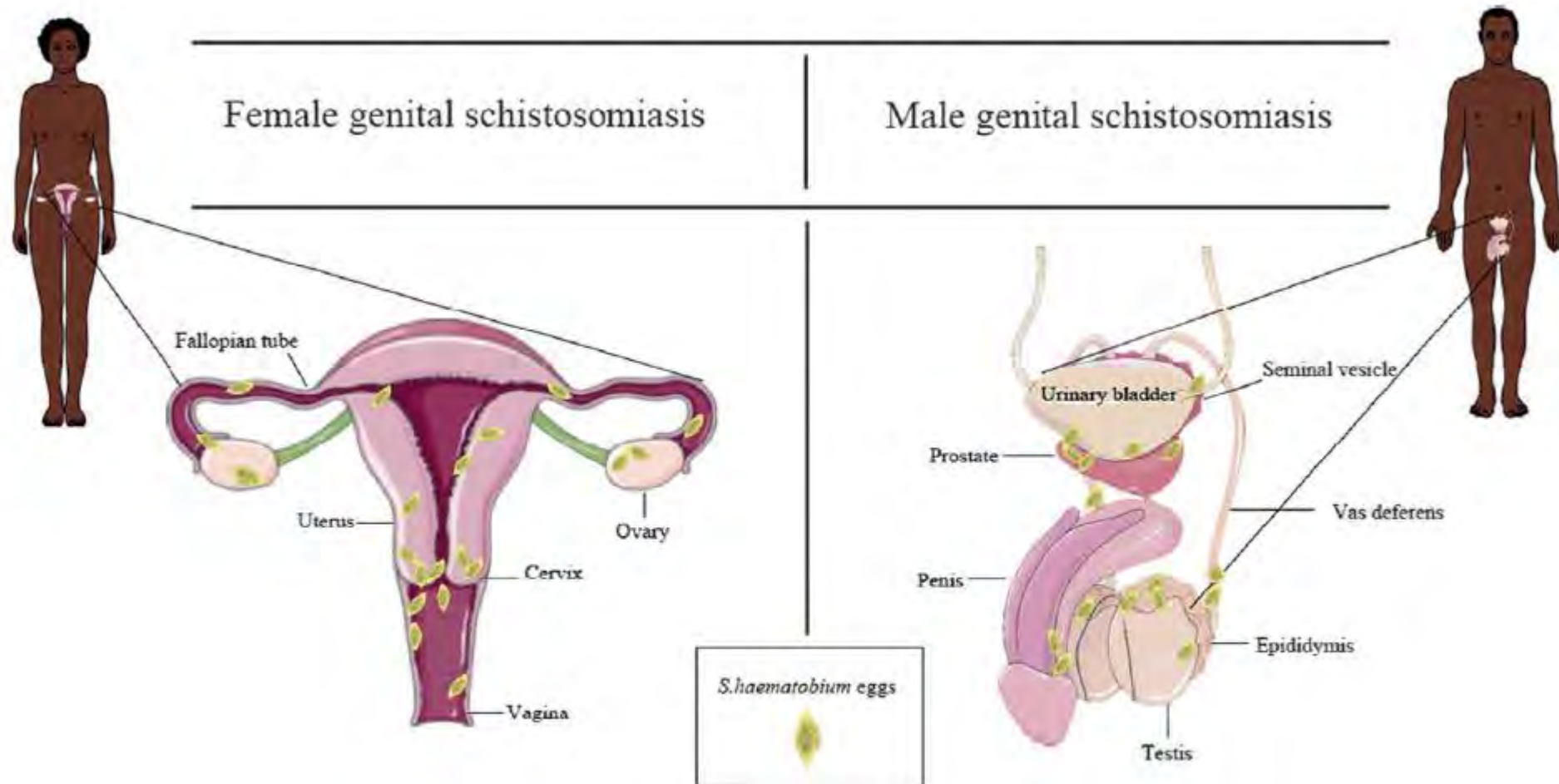
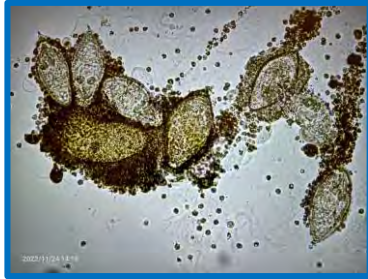


Fig. 3 *Schistosoma haematobium* egg deposition in the female and male genital tracts causing female and male genital schistosomiasis. Graphic components courtesy of <https://smart.servier.com/>.

COM ES DIAGNOSTICA?

- Ous en femta o orina, PCR, CAA
- Fase crònica (països no endèmics): serologia (+S/-E)



TÉ TRACTAMENT?

- Praziquantel
- >90% Eficàcia
- 1-2 dies
- Bona tolerància
- Medicació estrangera - Ús hospitalari



MANEIG DE L'ESQUISTOSOMIASI

- **P. ENDÈMICS:** MDA: distribució massiva de PRZ anual a les escoles → NO ES DIAGNOSTICA → **GAP DE CONEIXEMENT EN ADULTS E.CRÒNICA**
- **P. NO ENDÈMICS:** ECDC: Cribratge en migrants recents de < 5 anys

Però el tractament de la esquistosomiasi crònica
no està ben establert

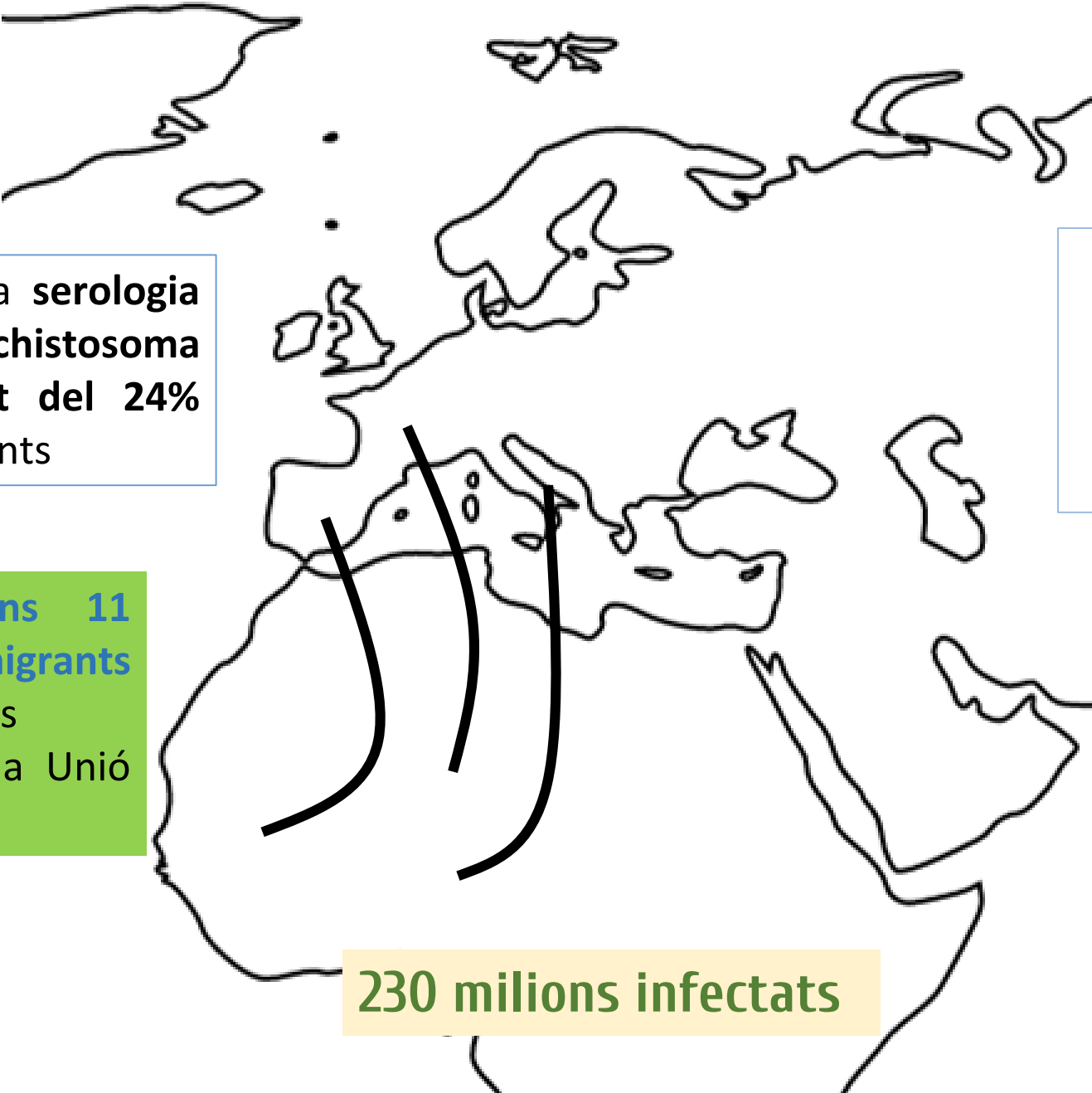
I tampoc existeix un gold standard pel seu diagnòstic

Review > Lancet Infect Dis. 2024 Mar 8:S1473-3099(24)00080-X.
doi: 10.1016/S1473-3099(24)00080-X. Online ahead of print.

Consensus definitions in imported human
schistosomiasis: a GeoSentinel and TropNet Delphi
study



“...migrants from endemic countries with **compatible or evocative signs and a positive serology**, without evidence of viable eggs in biological materials are currently classified as **probable chronic schistosomiasis**”



La prevalença de la **serologia positiva** a **Schistosoma** s'estima al voltant del **24%** entre aquests migrants

Aproximadament **uns 11 milions de migrants** procedents de països endèmics viuen a la Unió Europea

La majoria d'aquests migrants no han estat cribrats i porten molt de temps vivint a Europa

Una elevada proporció pot haver desenvolupat esquistosomiasi crònica

230 milions infectats

Persones procedents de zones endèmiques residents a Catalunya



PAÍS	HABITANTS
SENEGAL	26185
GAMBIA	16372
MALI	8429
GHANA	8154
NIGERIA	6266
GUINEA C	3826
MAURITANIA	1593
GUINEA E	1492
CAMERÚN	1310
LÍBAN	1064
COSTA IVORI	965
GUINEA B	848
BURKINA FASO	270
CONGO	230
KENIA	211
ANGOLA	172
SIERRA LEONA	125
TOTAL	77512

DISTRIBUCIÓ DE LA POBLACIÓ SUBSAHARIANA SAP METRONORD



N= 16086 ICS

Total: 20247

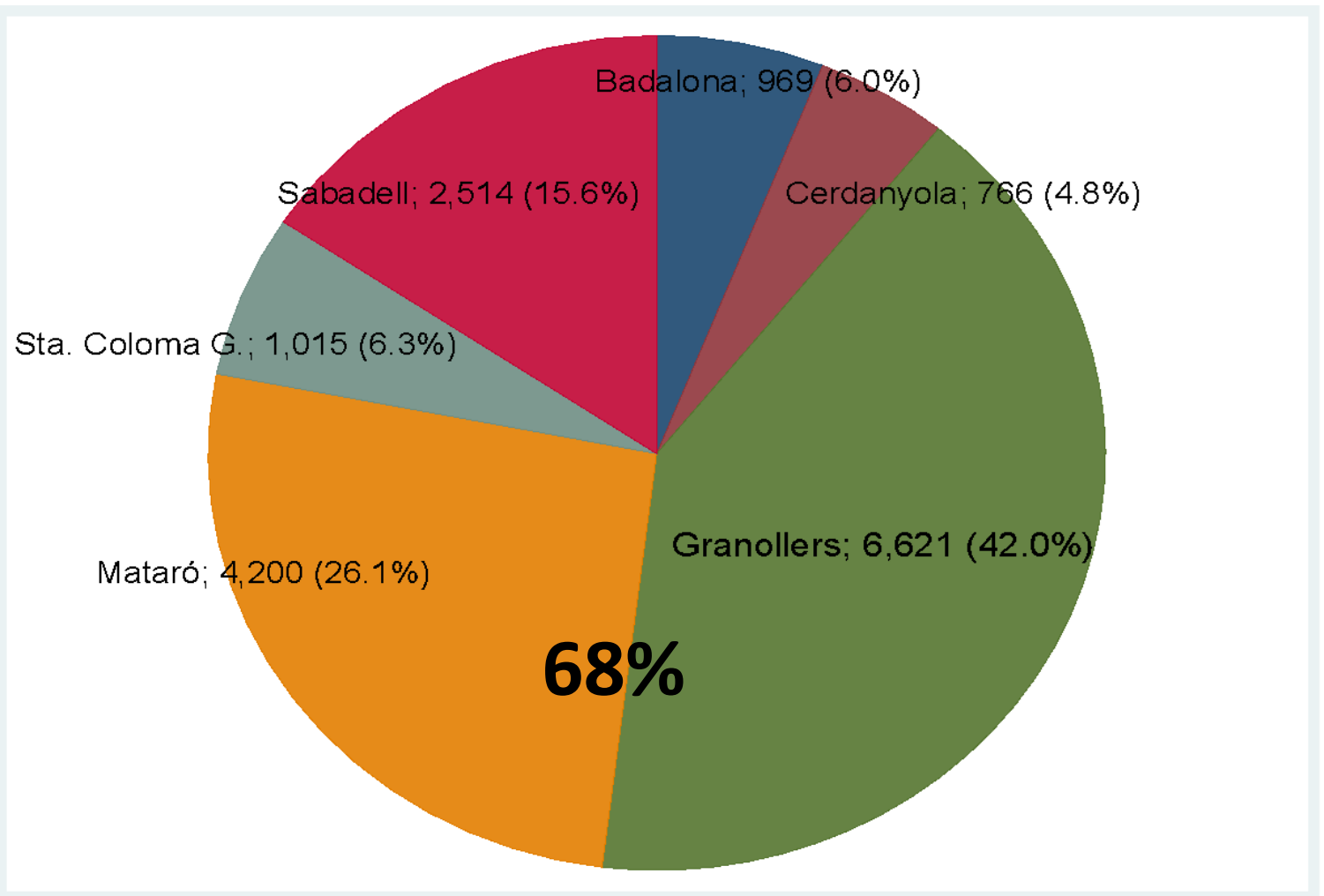
(28%dones)

SENEGAL= 5879

GÀMBIA = 3682

MALI = 1911

NIGÈRIA = 1141



2017

RESEARCH ARTICLE

Epidemiological, clinical, diagnostic and economic features of an immigrant population of chronic schistosomiasis sufferers with long-term residence in a non-endemic country (North Metropolitan area of Barcelona, 2002-2016)

Sílvia Roure^{1,2*}, Lluís Valerio³, Olga Pérez-Quilez³, Gema Fernández-Rivas⁴,

2022

BRIEF RESEARCH REPORT
published: 09 March 2022
doi: 10.3389/fpubh.2022.778110



Schistosomiasis Among Female Migrants in Non-endemic Countries: Neglected Among the Neglected? A Pilot Study

Sílvia Roure^{1,2*}, Olga Pérez-Quilez¹, Xavier Vallès^{1,3}, Lluís Valerio¹, Israel López-Muñoz¹, Laura Soldevila^{1,2}, Ariadna Torrella¹, Gema Fernández-Rivas⁴, Anna Chamorro^{5,6,7} and Bonaventura Clotet^{5,6,7}



2022

Public Health in Practice

Available online 18 March 2022, 100245

In Press, Journal Pre-proof



A simple new screening tool for diagnosing imported schistosomiasis

Sílvia Roure^{a, b, c}, Olga Pérez-Quilez^a, Xavier Vallès^{a, c}, Lluís Valerio^a, Gemma Fernández-Rivas^d, Belén Rivaya^d, Israel López-Muñoz^a, Laura Soldevila^{a, b}, Xavier Villanova^a, Roger Paredes^{c, e, f, g}, Maria-Lluïsa Pedro-Botet^b, Sebastián Videla^{g, h}, Bonaventura Clotet^{b, c, e, f, g}

2023

PLOS NEGLECTED TROPICAL DISEASES

RESEARCH ARTICLE

Schistosomiasis screening in non-endemic countries from a cost perspective: Knowledge gaps and research priorities. The case of African long-term residents in a Metropolitan Area, Spain

Sílvia Roure^{1,2,3}, Francesc López^{4,5,6}, Irene Oliva⁵, Olga Pérez-Quilez¹, Oriol March⁵,

Presència del PROSICS al territori.



1. PROSICS Lleida
2. PROSICS Catalunya Central
3. PROSICS Metropolitana Nord
4. PROSICS Barcelona
5. PROSICS Metropolitana Sud
6. PROSICS Tarragona



RESEARCH ARTICLE

Schistosomiasis screening in non-endemic countries from a cost perspective: Knowledge gaps and research priorities. The case of African long-term residents in a Metropolitan Area, Spain

Silvia Roure^{1,2,3}, Francesc López^{4,5,6}, Irene Oliva⁵, Olga Pérez-Quilez¹, Oriol March⁵

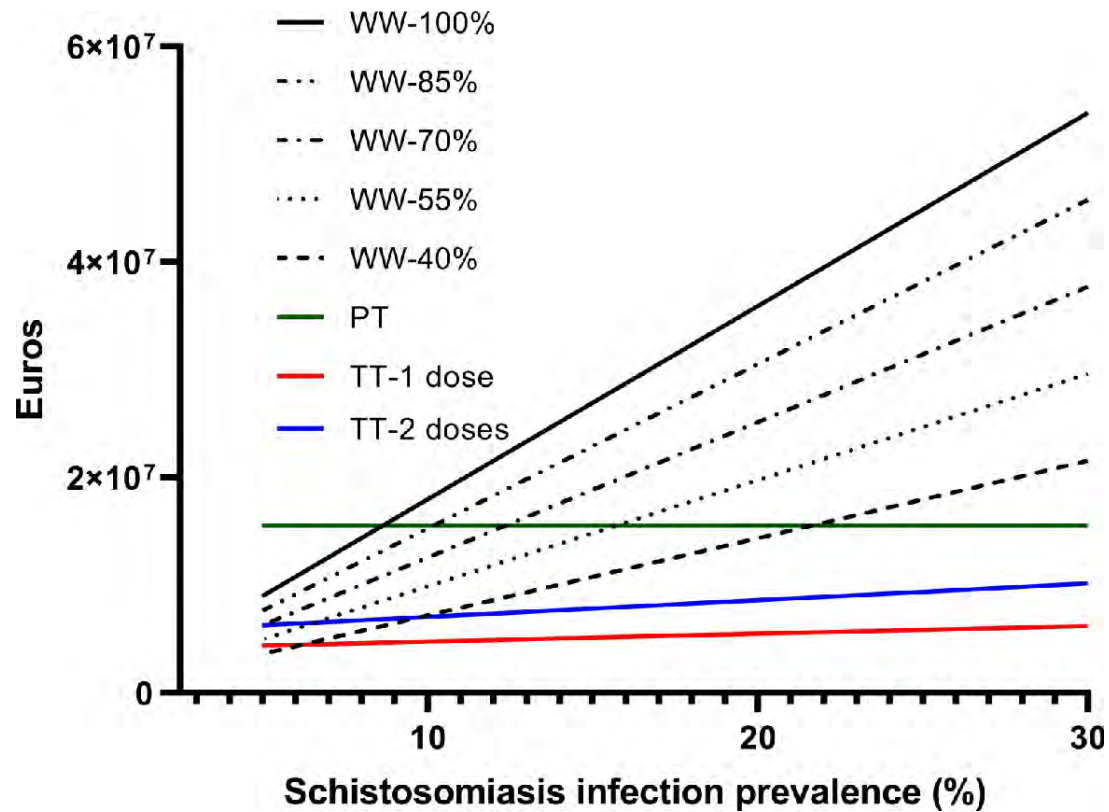


Fig 1. Total projected cost for each strategy at different prevalence rates and for the WW strategy, at five percentages of the maximum cost of treatment of associated morbidities*. *WW: Watchful and waiting strategy; PT: Presumptive treatment; TT: Test and treat strategy.

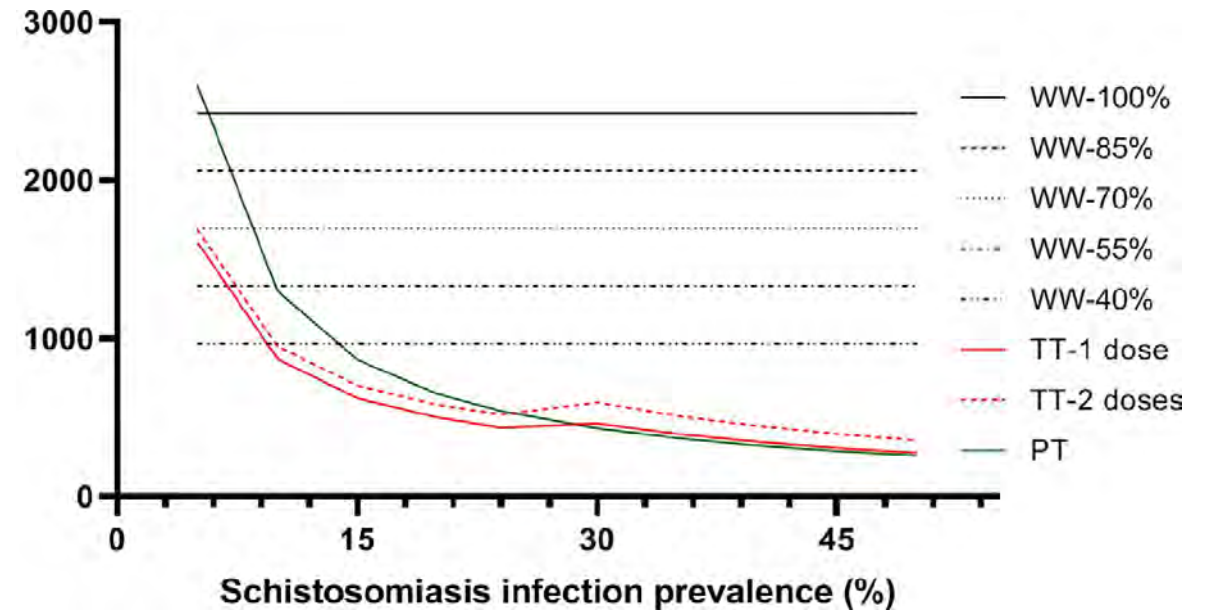


Fig 2. Projected cost per infected individual for each strategy at different prevalence rates and for the WW strategy, at five percentages of the maximum cost of treatment of associated morbidities*. *WW: Watchful and waiting strategy; PT: Presumptive treatment; TT: Test and treat strategy.

Cribratge comunitari d'esquistosomiasi a la Metropolitana Nord

SCHISTO STOP
2022-2023



SAPS QUÈ ÉS L'ESQUISTOSOMIASI?



- TESTIMONI 1: <https://youtu.be/nUrO5cBhYfo>
- TESTIMONI 2: <https://youtu.be/Ob7BB6PT8x8>

¿Conoce qué es la Esquistosomiasis?

221 millones de personas están afectadas en todo el mundo.

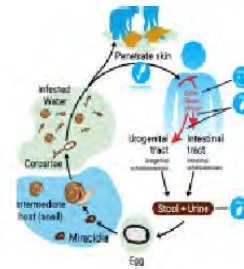


La **Esquistosomiasis** es una infección parasitaria. La infección se produce cuando las larvas del parásito penetran en la piel de una persona durante el contacto con agua infestada, a menudo a través de la pesca, la natación, el baño y el lavado de ropa.



¿Qué problemas provoca?

Al principio, no suele haber síntomas de esquistosomiasis, pero el parásito puede permanecer en el cuerpo durante muchos años y causar problemas más graves. Esta enfermedad puede causar sangre en la orina, infecciones de orina, dolor abdominal o pélvico, diarrea, y puede provocar graves problemas a largo plazo como la insuficiencia renal, cáncer de vejiga, cirrosis hepática, infertilidad o ictus.



¿Cómo se diagnostica?

Se puede diagnosticar con un análisis de sangre.

¿Cómo se trata?

El tratamiento es sencillo. Tomar PRAZIQUANTEL durante 2 días. Es muy importante realizar un tratamiento precoz antes de desarrollar las complicaciones.

Diagnosticar y tratar de forma precoz es muy importante para evitar complicaciones

Més informació: www.who.int/health-topics/schistosomiasis

Esquistosomiasi

221 milions de persones estan afectades a tot el mon.

**VOLS FER-TE UNA PROVA
PER SABER SI TENS LA INFECCIÓ?**



INTERVENCIONS COMUNITÀRIES



Inici - Vincle amb usuaris de la USAI

El Nini i l'Alieu col·laboren en la creació d'un video per fer difusió de la infecció.

Contacte amb els líders comunitaris gener-abril 22



TREBALL COMUNITARI RECLUTAMENT PASSIU



2 reunions a Can Palots

ABRIL 2022 Es convoca als líders de les associacions: ____



Mezquita Zawi

MAIG 2022 Canovelles



**Associació de joves Niiombre
Associació Ñodema Ousmane**

MAIG 2022 Canovelles



**Mezquita Canovelles
Festa - Associació de migrants del
Senegal**

JUNTY-2022 Canovelles



Mezquita Bilal
MAIG-2022 Mataró.



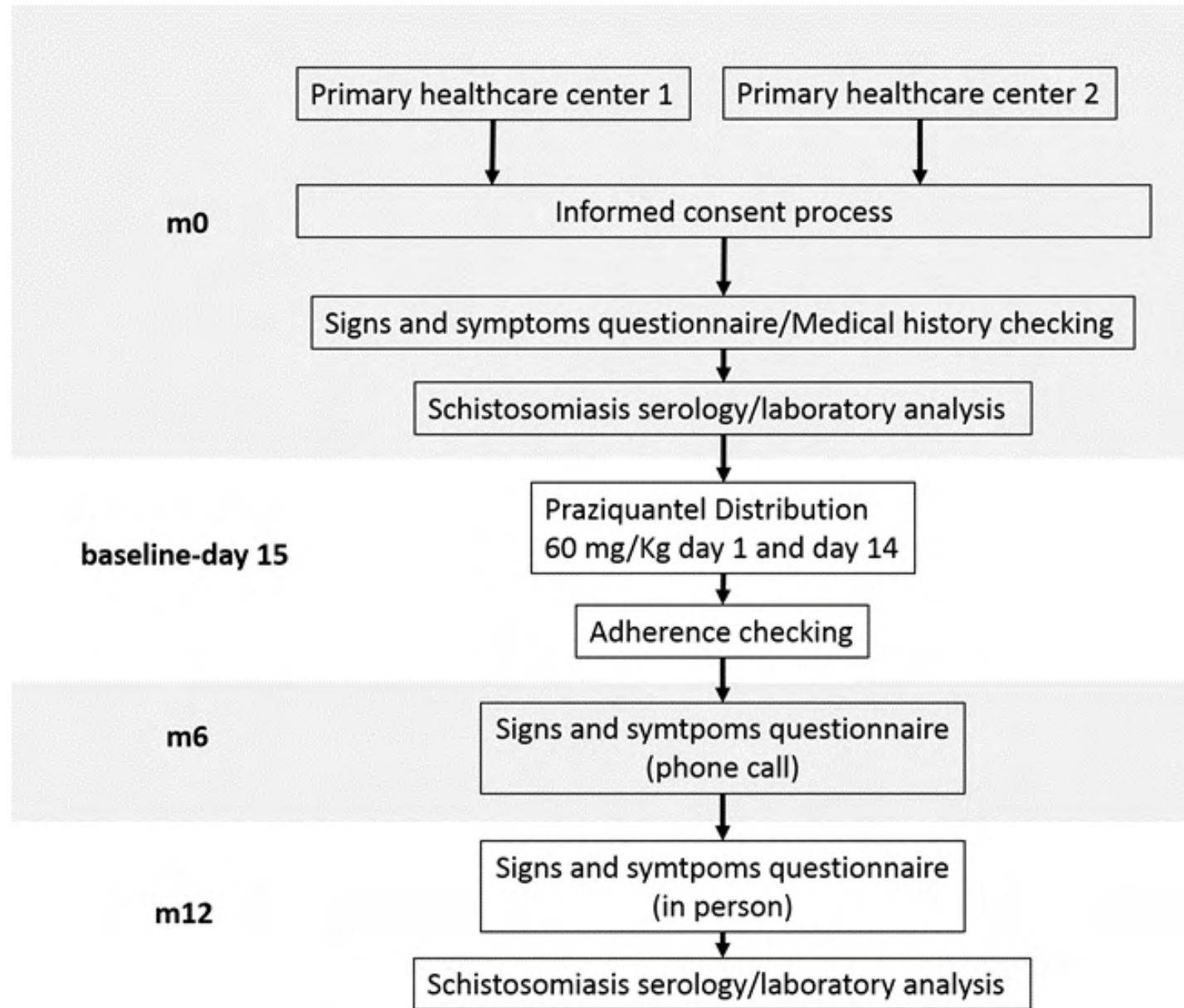
**Associació - Mezquita
Bhantal Fouta Diallo**

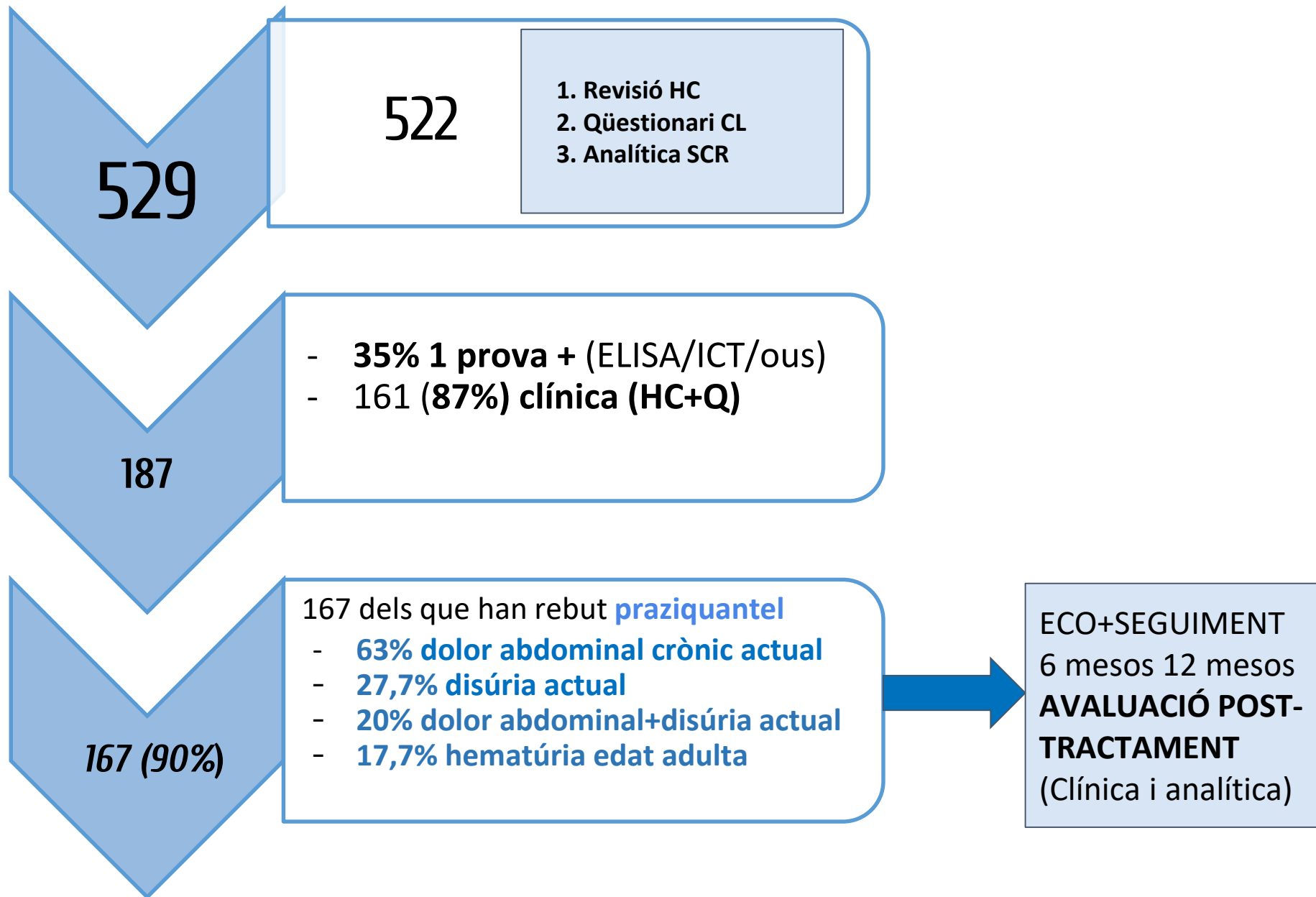
MAIG-2022 Mataró



**Associació de dones Kambin Kafo
Associació Ñodema Kafo**

JUNTY-2022 Canovelles





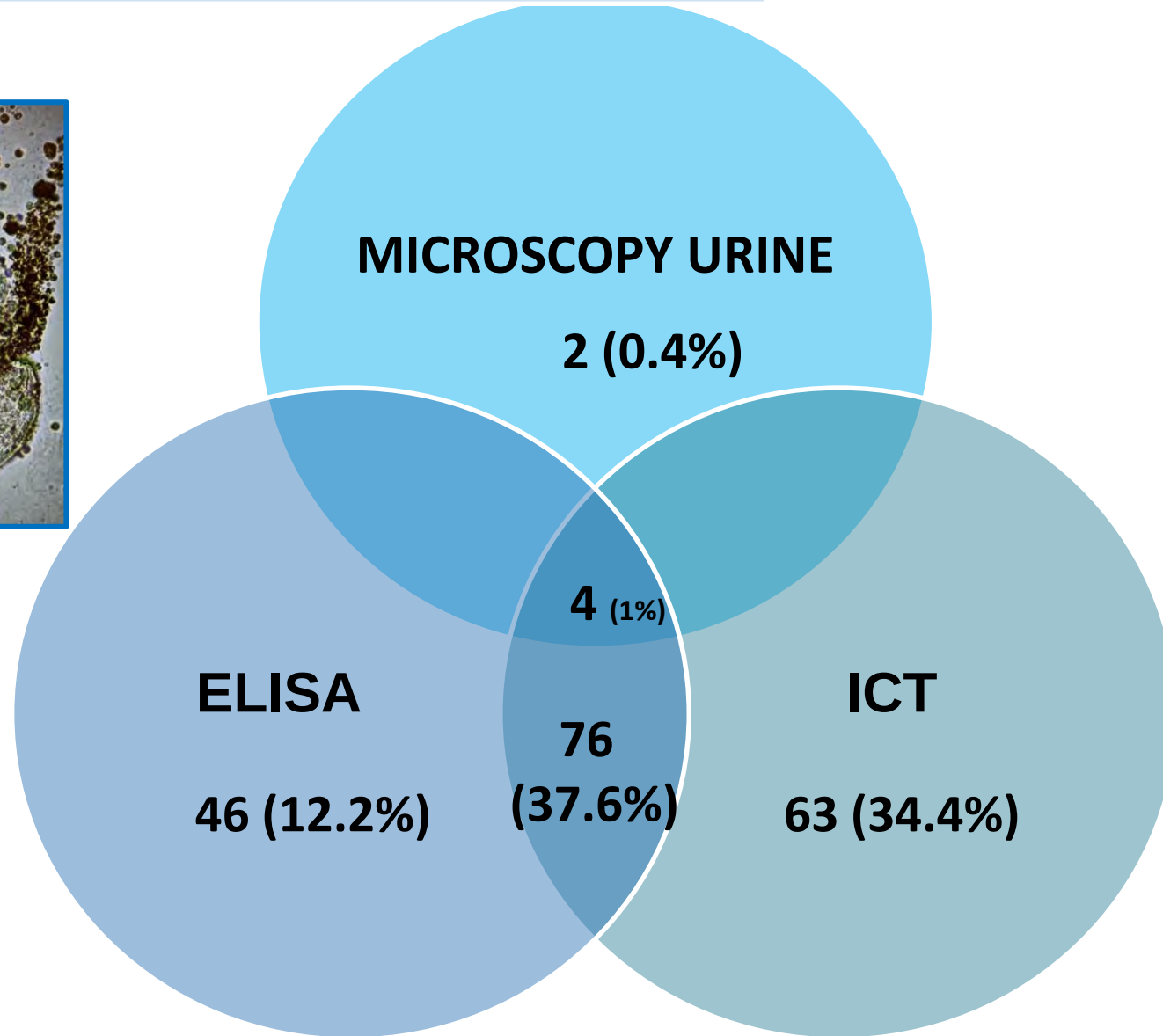
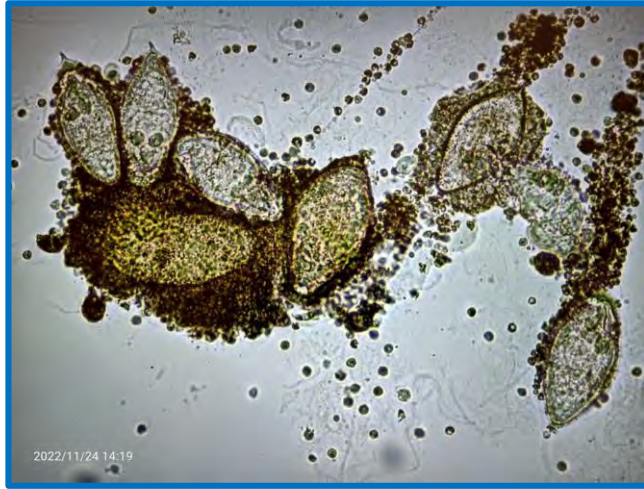
CLÍNICA I COMPLICACIONS SEROLOGIA POSITIVA

- 1. REVISIÓ HISTÒRIA CLÍNICA**
- 2. QÜESTIONARI**
- 3. ANALÍTICA SCREENING**

DADES SOCIO DEMOGRÀFIQUES

Variable	Total		Schisto+		p
	N	%	N	%	
Males	390	74.4	153	39.3	0.03
Females	134	25.6	39	29.1	
Age (m, DS)	42.7	(11.5)	42.9	(17.9)	0.7
18-25	41	7.8	14	34.2	0.9
26-35	103	19.6	37	35.9	
36-45	194	37.0	72	37.1	
46-55	126	24.0	48	38.4	
>55	61	11.6	22	36.1	
Country of origin					
Senegal	241	46.0	82	34.1	0.2
Gambia	125	23.9	40	32.3	0.2
Mali	81	15.5	37	45.7	0.07
Guinea Conakry	38	7.3	17	44.7	0.3
Mauritania	13	2.5	7	53.9	0.2
Ghana	10	1.9	3	30.0	0.7
Other countries	16	3.1	6		
Years living in EU (median, IQR)	16	(10-21)	16	(11-20.8)	0.9
<5	33	10.0	27	33.8	0.9
5 to 10	56	10.7	19	33.9	
10 to 15	110	21.0	44	40.0	
15 to 20	144	27.5	54	37.8	
>20	134	25.6	48	35.8	
Return to the country of origin					
<5 years	336	64	134	40	0,05
>5 years or never	189	36	59	31,2	
Swimming in wild waters					
Yes	68	17,5	23	33,8	0,3
Not	321	82,5	128	40.1	
Return to the country of origin (yes/no)	396 78.7		152 38.5		0.07

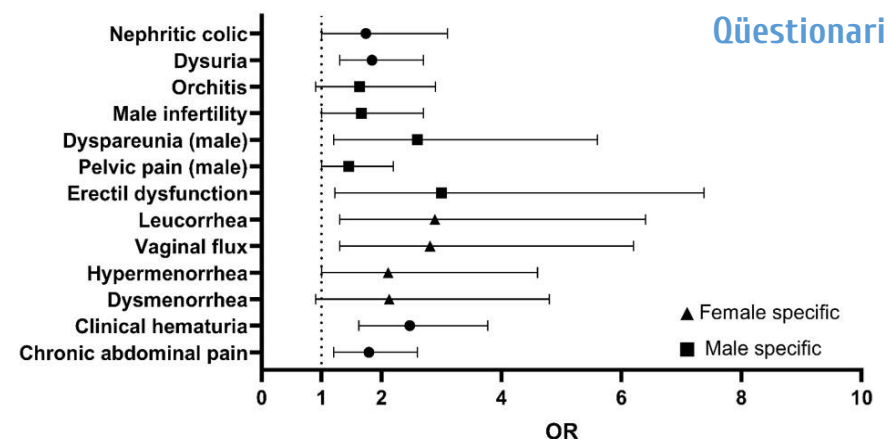
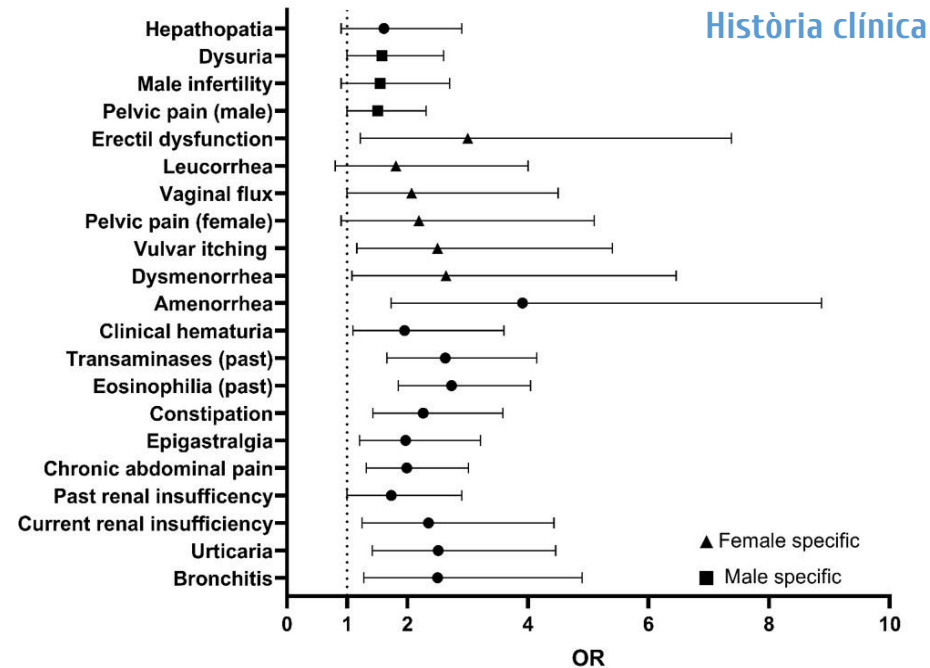
PROVES MICROBIOLÒGIQUES I SCORE CLÍNIC

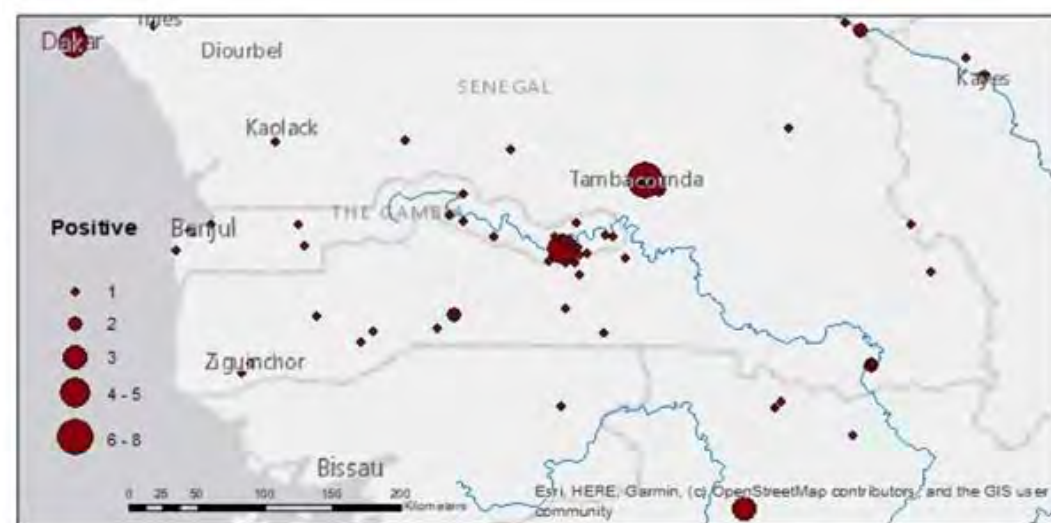
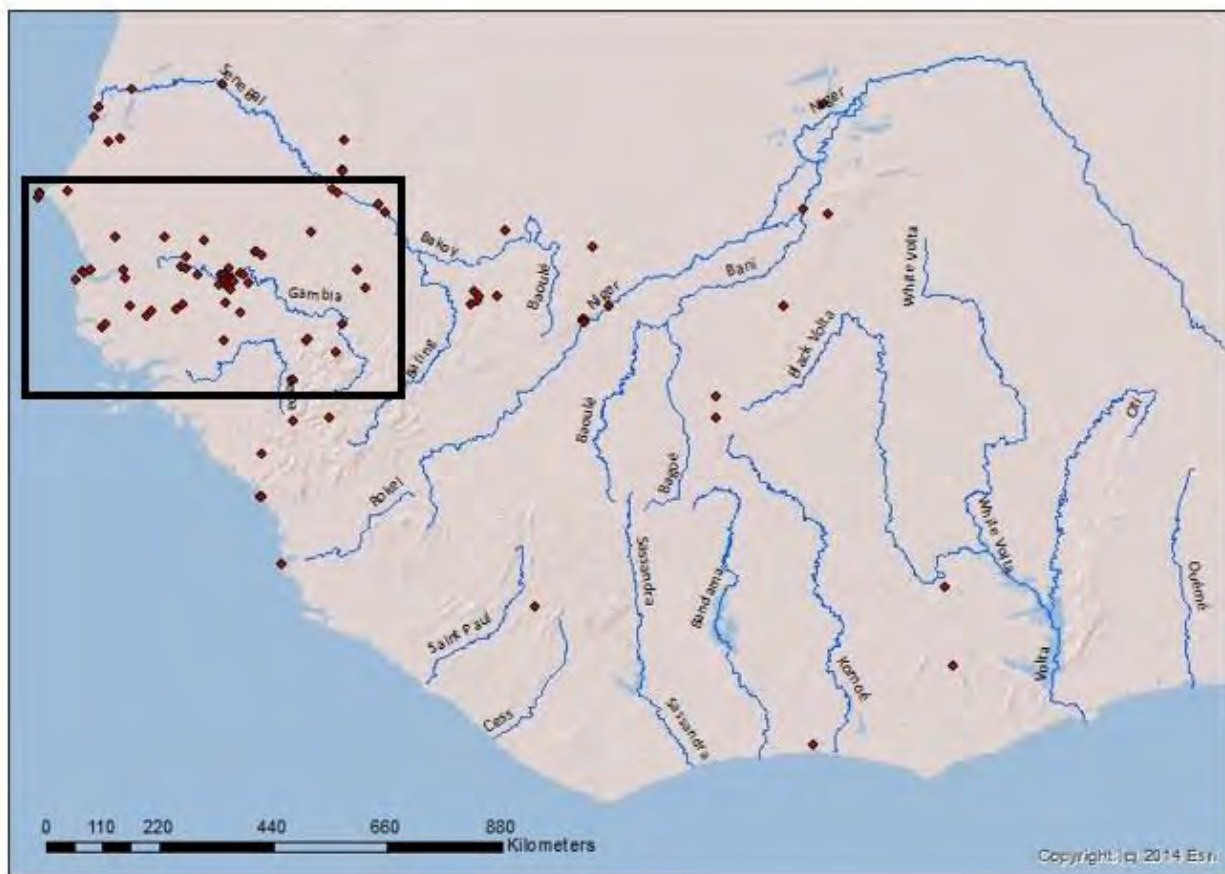


RESUM DELS RESULTATS

- Elevada **seroprevalença** a nivell comunitari de 522 participants: **35%**
- 42 anys promig, Població **resident de llarga estada** (mediana de 16 anys)
<Senegal , Gambia , Mali
- **Associació significativa de serologia positiva amb signes i símptomes clínics i alteracions de laboratori compatibles amb esquistosomiasi crònica**
- Les presentacions sindròmiques **específiques genitals** en homes i dones (Esquistosomiasi Genital Masculina i Esquistosomiasi Genital Femenina) **són molt freqüents** en la població estudiada

Elevada prevalença de probable esquistosomiasi crònica



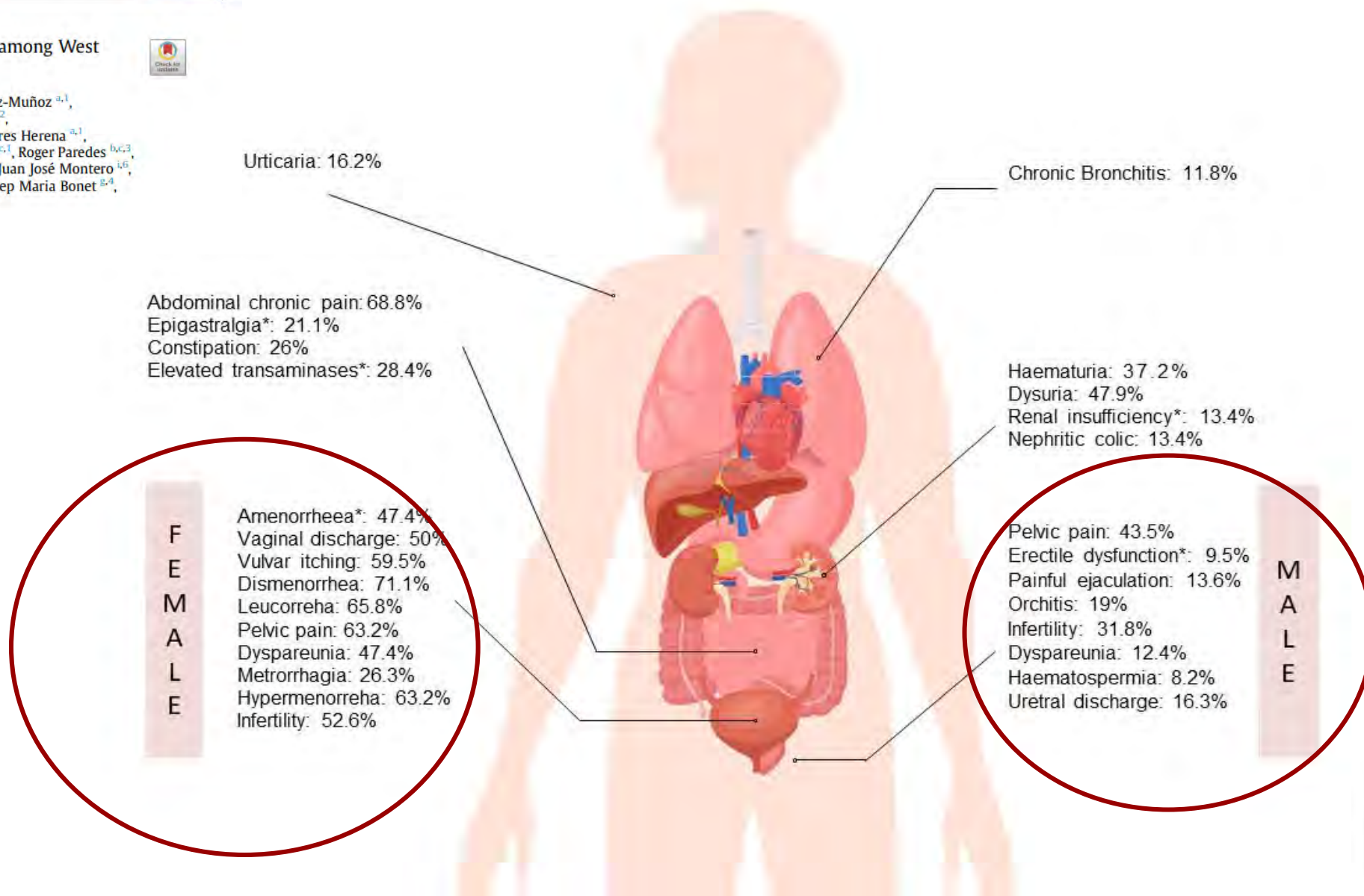


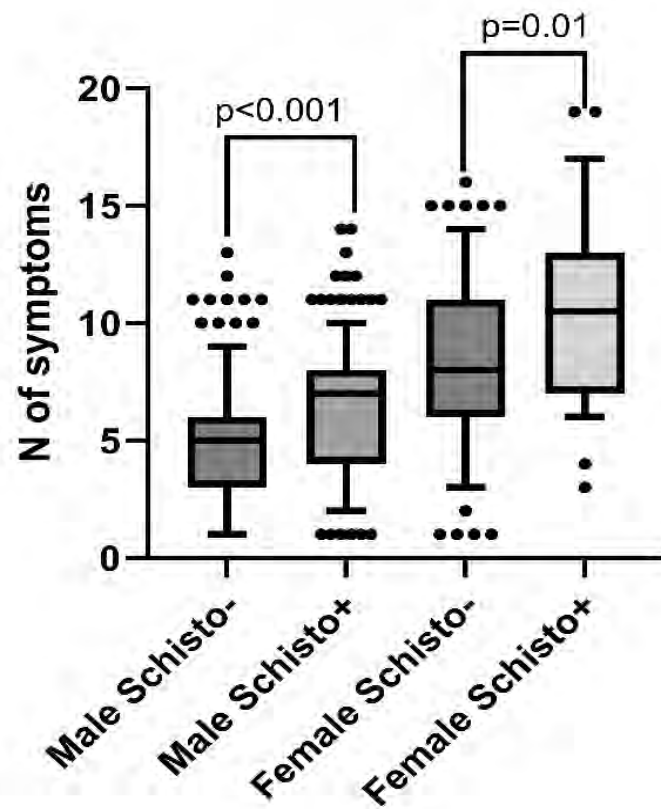
Morbidity burden of imported chronic schistosomiasis among West African migrants

Sílvia Roure ^{a,b,c,e}, Xavier Vallès ^{a,b,d,1}, Olga Pérez-Quílez ^{a,1}, Israel López-Muñoz ^{a,1}, Lluís Valerio ^{a,1}, Laura Soldevila ^{a,b,c,1}, Anna Chamorro ^{b,2}, Elena Abad ^{b,2}, Alaa H.A. Hegazy ^{d,e,f,3}, Gema Fernández-Rivas ^{c,3}, Ester Gorriz ^{a,1}, Dolores Herena ^{a,1}, Elia Fernández-Pedregal ^{a,b,c,1}, Alba San José ^{b,2}, Sergio España-Cueto ^{a,b,c,1}, Roger Paredes ^{b,c,3}, Jose Miranda-Sánchez ^{e,4}, Maria Carme Miralles ^{b,5}, Carmen Conde ^{b,5}, Juan José Montero ^{i,6}, Maria Amparo Núñez-Andrés ^{j,7}, Josep M. Llibre ^{b,c,3}, Mar Isnard ^{e,4}, Josep Maria Bonet ^{e,4}, Oriol Estrada ^{k,3}, Núria Prat ^{e,4}, Bonaventura Clotet ^{b,l,m,2}

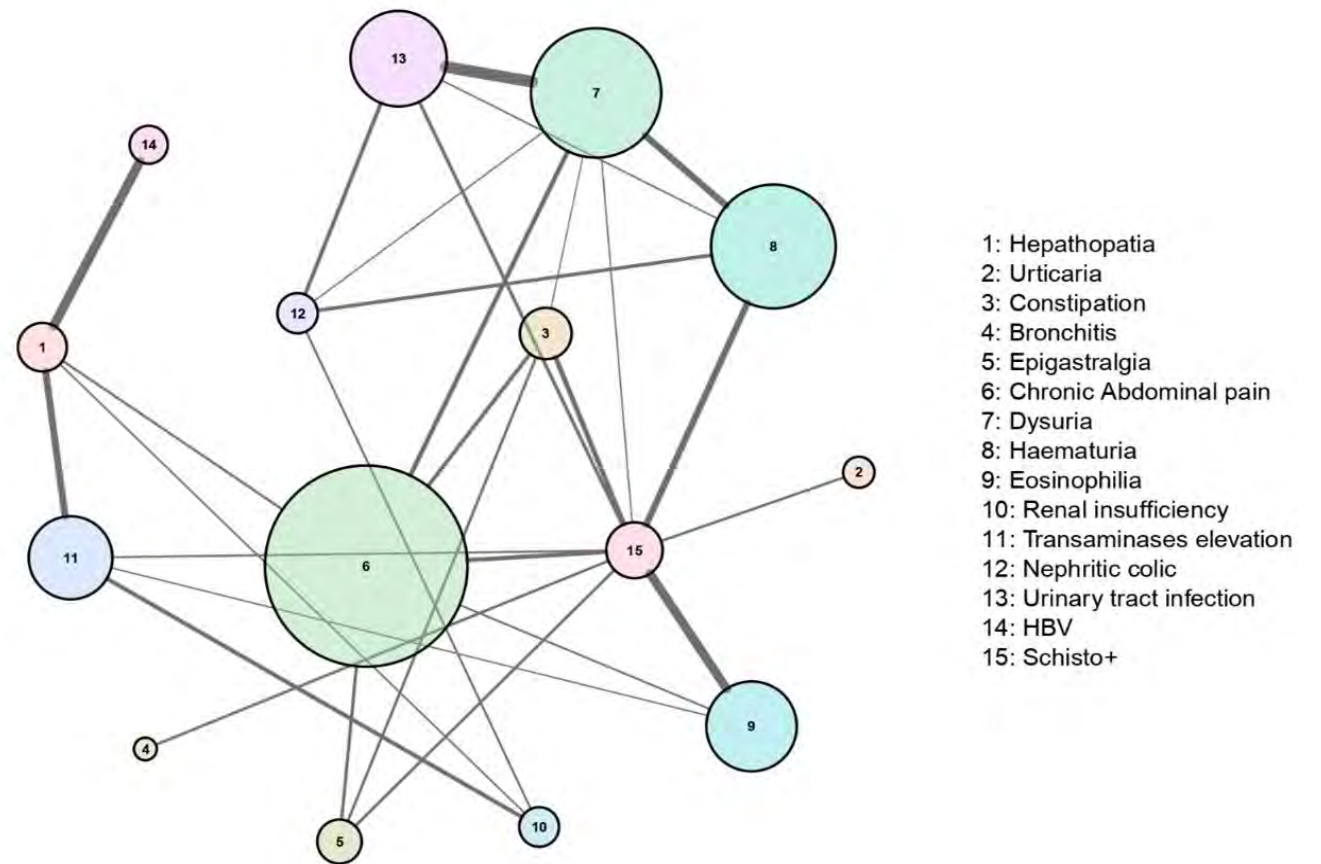


SEROLOGIA POSITIVA (N=187)





Box plot of cumulative number of clinical signs and symptoms stratified by positive and negative schistosoma test results and sex



Network analysis results

RESEARCH ARTICLE

Open Access

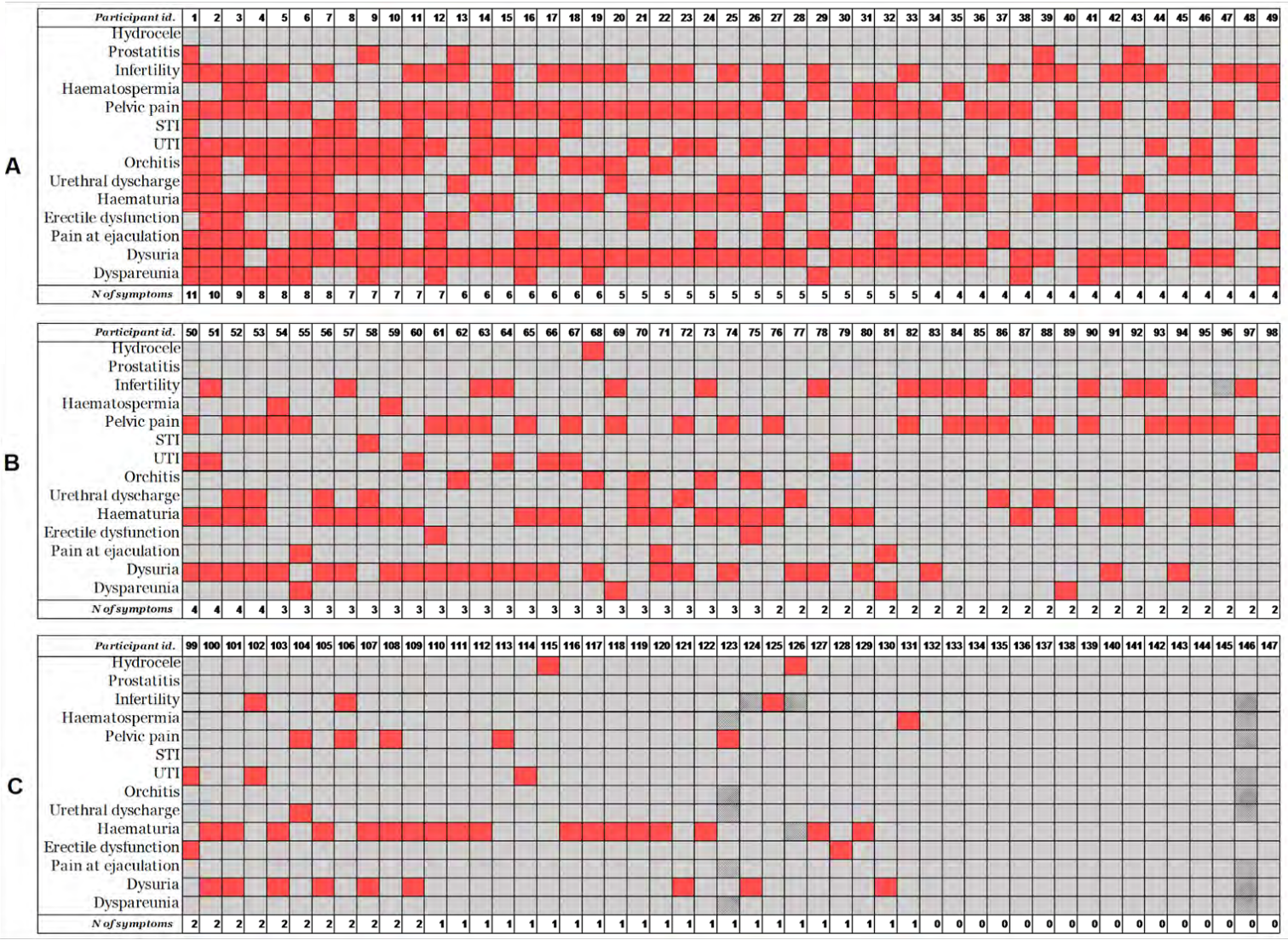
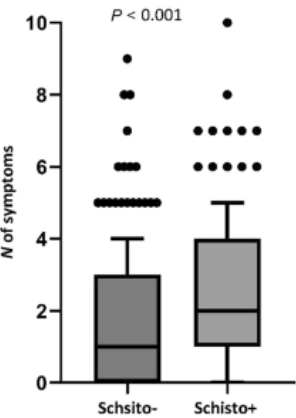


Male genitourinary schistosomiasis-related symptoms among long-term Western African migrants in Spain: a prospective population-based screening study

Sílvia Roure^{1,2,3*}, Xavier Vallès^{1,2,4}, Olga Pérez-Quílez¹, Israel López-Muñoz¹, Anna Chamorro², Elena Abad², Lluís Valerio^{1,2}, Laura Soldevila^{1,2,3}, Sergio España^{1,2,3}, Alaa H. A. Hegazy^{5,6,7}, Gema Fernández-Rivas^{5,6}, Ester Gorriç¹, Dolores Herena¹, Mário Oliveira⁸, Maria Carme Miralles⁹, Carmen Conde⁹, Juan José Montero-Alia¹⁰, Elia Fernández-Pedregal^{1,2,3}, Jose Miranda-Sánchez¹¹, Josep M. Llibre^{2,3}, Mar Isnard¹¹, Josep Maria Bonet¹¹, Oriol Estrada¹², Núria Prat¹¹, Bonaventura Clotet^{2,13,14}The Schisto-Stop study group

Accumulation of urogenital signs and symptoms among every man with a positive *Schistosoma* test (N=147)

N=147 (37.6 % S +)
46% Senegal
17 a UE
Dolor pèlvic,
hematúria, disúria,
dolor ejaculació,
disparèunia, disfx
erèctil (9)
Median: 2



Only 11% asymptomatic

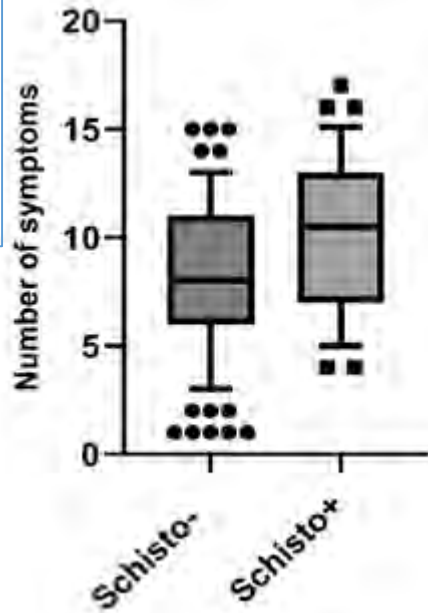
Each column represents an individual with a schistosomiasis positive test. The graphical representation has been ordered according to the cumulative number of clinical items in every case from shaded squares indicates missing or data not available

Research Letter

Female genitourinary schistosomiasis-related symptoms in long-term sub-Saharan African migrants in Europe: a prospective population-based study

Sílvia Roure, PhD^{1,2,3,*}, Xavier Vallès, PhD^{1,2,4}, Olga Pérez-Quílez, BSc¹, Israel López-Muñoz, BSc¹, Anna Chamorro, BSc², Elena Abad, BSc²,

N=134 (28% S +)
Senegal>Gambia
14 a UE
Dismenorrea,
leucorrea, amenorrea
Median: 11

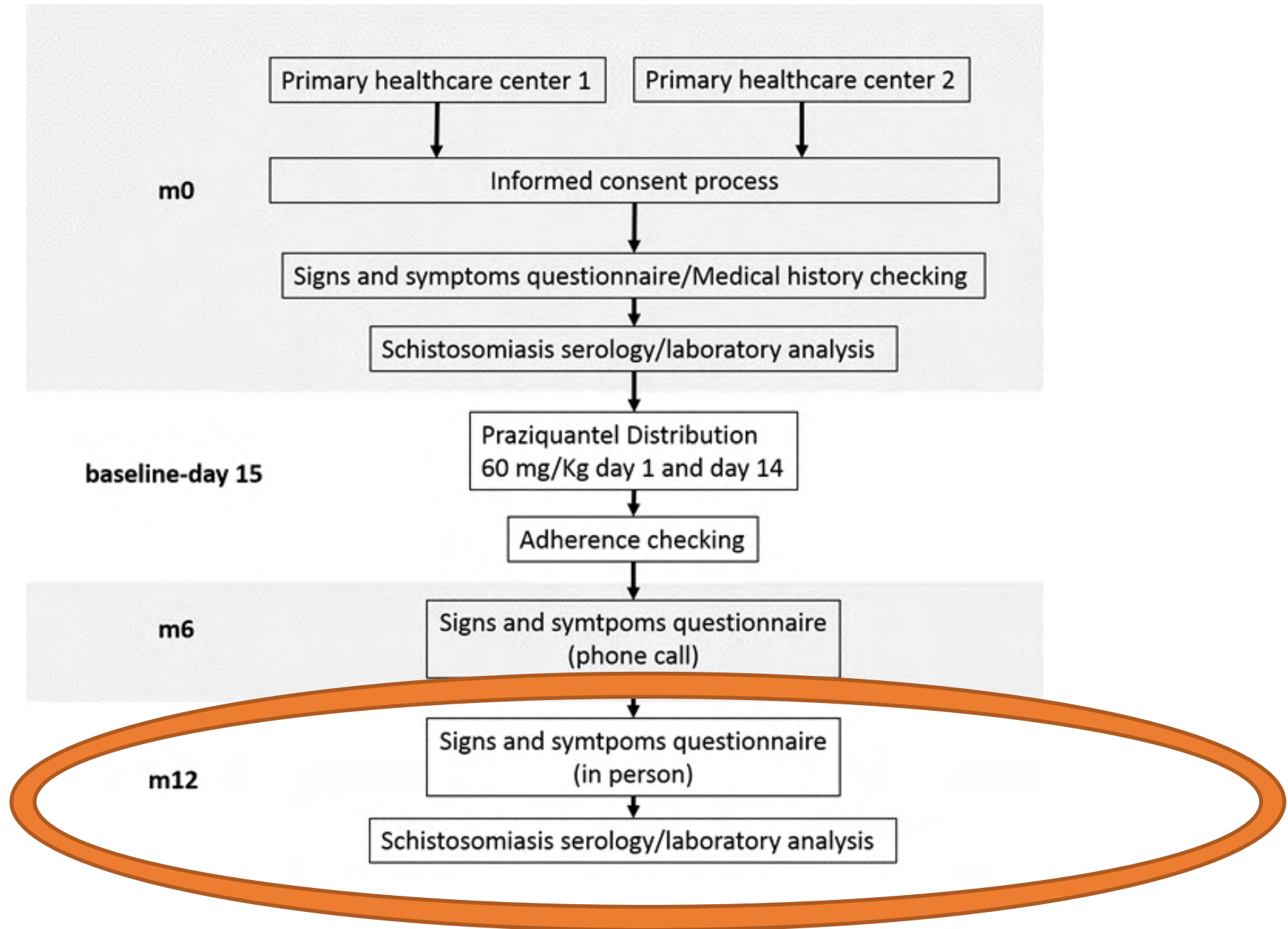
[illegible]

FOLLOW UP

Seguiment dels pacients amb probable esquistosomiasi crònica

Post tractament amb praziquantel

6m, 12m



THERAPEUTIC RESPONSE TO AN EMPIRICAL PRAZIQUANTEL TREATMENT IN LONG-STAYING SUBSAHARAN AFRICAN MIGRANTS WITH POSITIVE SCHISTOSOMA SEROLOGY AND CHRONIC SYMPTOMS: A PROSPECTIVE COHORT STUDY IN SPAIN

COMMUNITY SCHISTOSOMIASIS SCREENING IN LONG-TERM SUB-SAHARAN AFRICAN MIGRANTS

N=522

187 Probable chronic schistosomiasis → PRZ 60mg/d x2

149 completed follow-up (6 month, 12 month)

79.9% Males, 43.6% Senegal, Median age=43, Residence in Europe 17 years (IQR 12-21)

1. CLINICAL RESPONSE: Significant decrease ($p<0.001$) in the number of signs and symptoms (Fig 1)
70.3% TOTAL SYMPTOMS RESOLUTION
2. SEROLOGICAL RESPONSE: CLEARANCE RATE SEROLOGY 54.7% (ELISA) and 24.3% (ICT) (Fig 2)

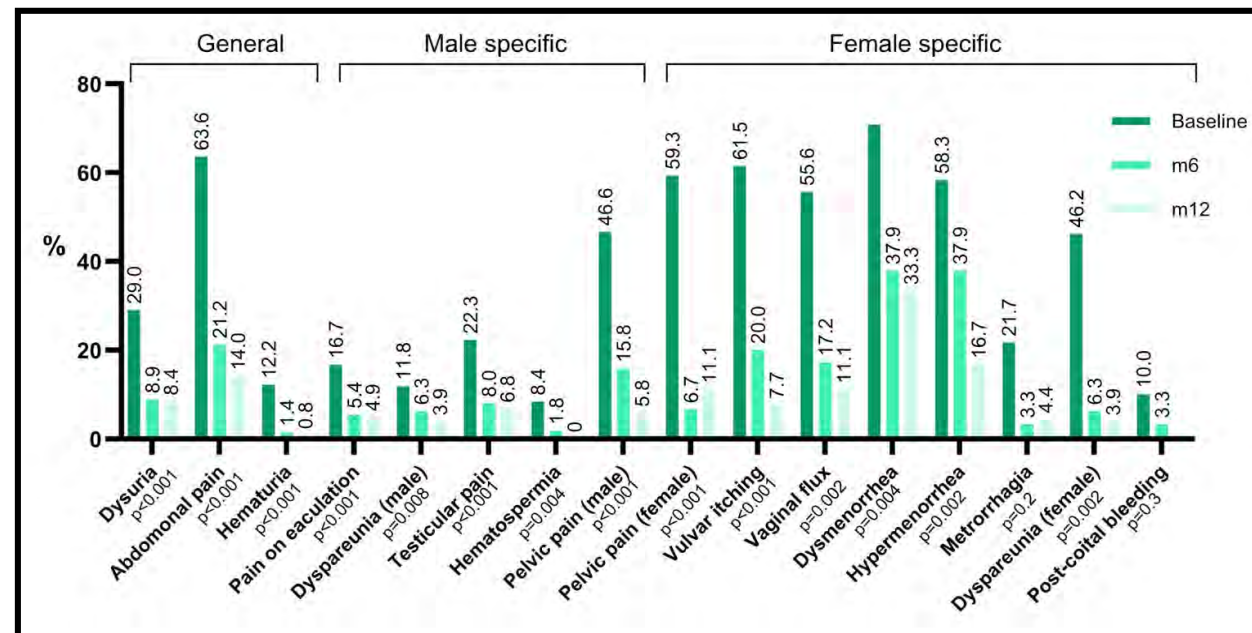


Fig 1.

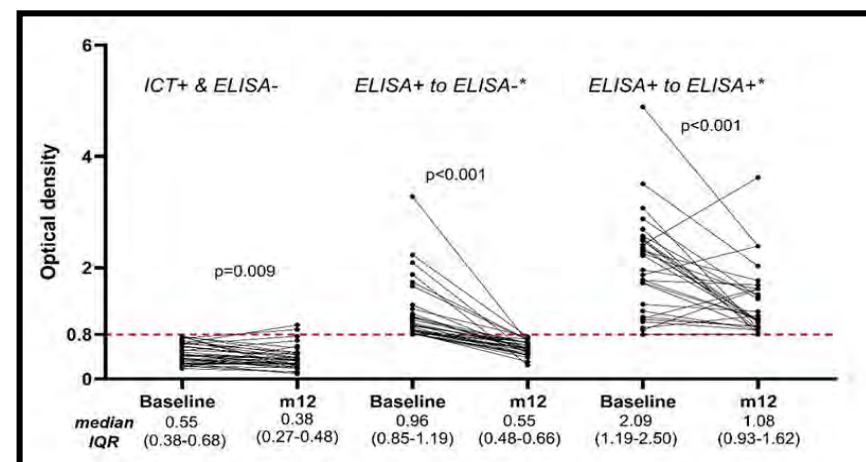
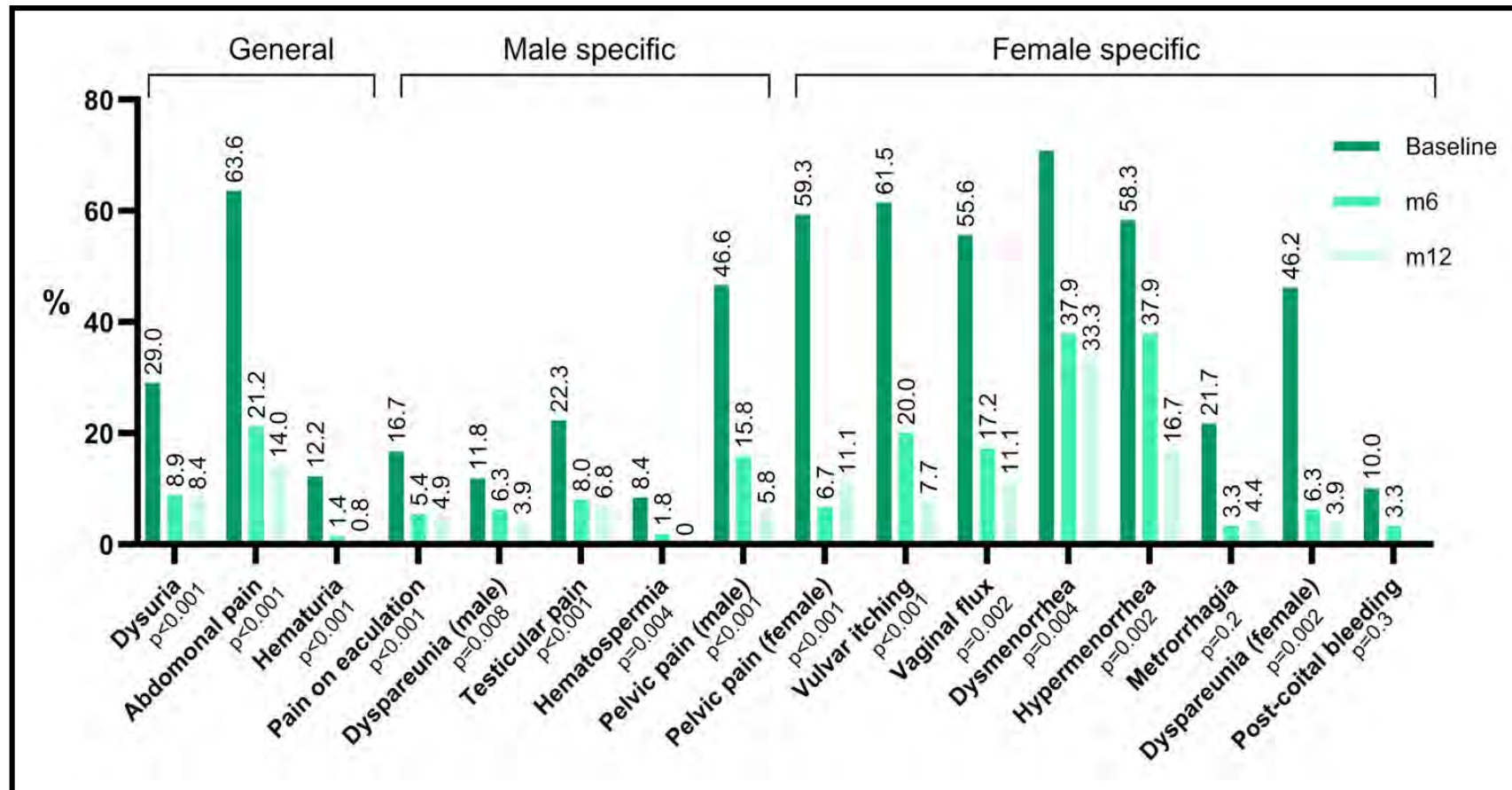


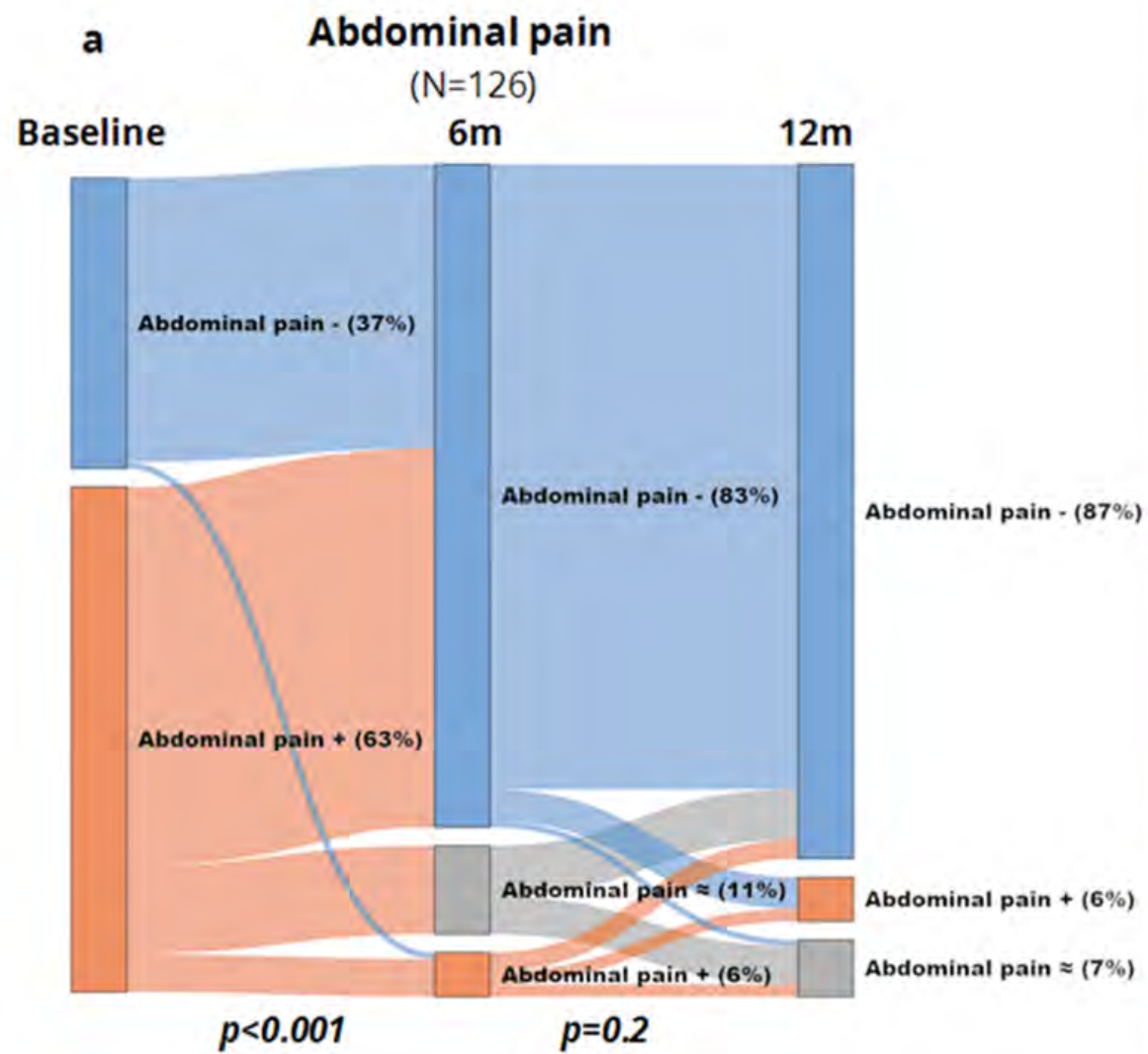
Fig 2.



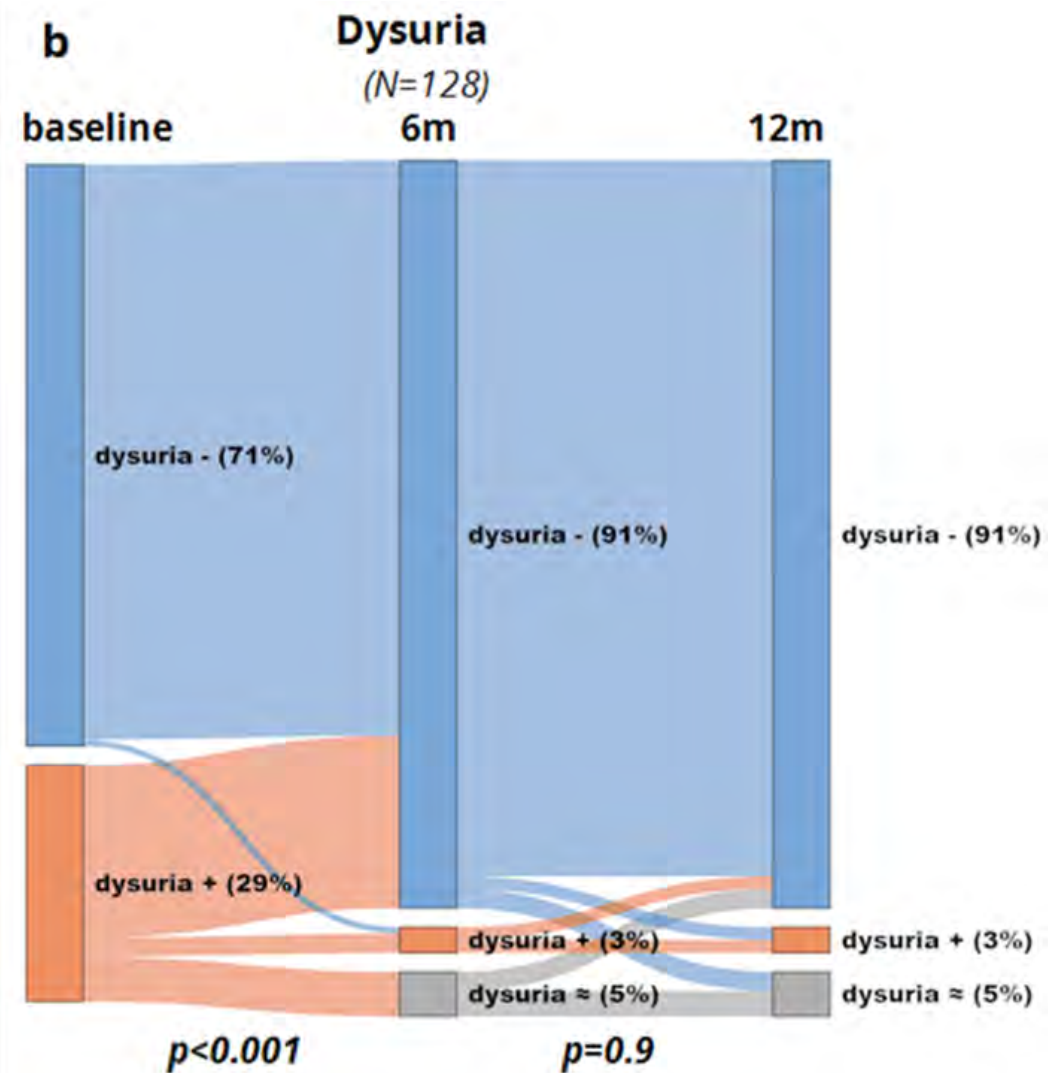
Therapeutic response to an empirical praziquantel treatment in long-staying sub-Saharan African migrants with positive *Schistosoma* serology and chronic symptoms: A prospective cohort study in Spain

Paired data comparison between clinical assessment at m0 vs.m6, m12 (n=149)





Cure rate: 80.5%

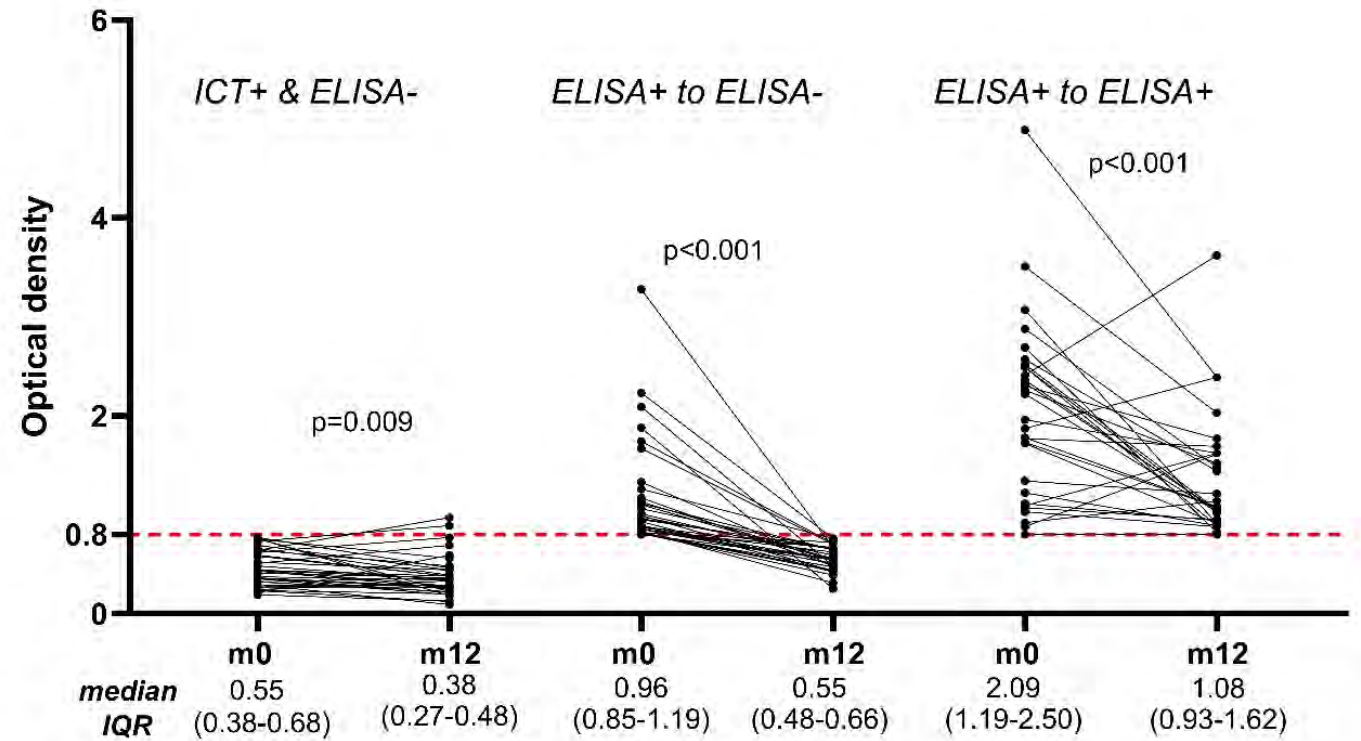


Cure rate: 79%

Clinical item	m0			m12		Cure rate (%) ⁴
	N ¹	n ²	%	n (n) ³	%	
Abdominal pain	129	82	63.6	18 (2)	14.0	80.5
Dysuria	131	38	29.0	11 (3)	8.4	79.0
Hematuria	131	16	12.2	1 (0)	0.8	93.8
Pain on ejaculation	102	17	16.7	5 (0)	4.9	70.6
Dyspareunia (males)	102	12	11.8	4 (0)	3.9	66.7
Testicular pain	103	23	22.3	7 (0)	6.8	69.6
Hematospermia	107	9	8.4	0 (5)	4.7	100
Pelvic pain (males)	103	48	46.6	6 (0)	5.8	87.5
Pelvic pain (females)	27	16	59.3	3 (0)	11.1	81.3
Vulvar itching	26	16	61.5	2 (0)	7.7	87.5
Vaginal flux	27	15	55.6	3 (1)	11.1	86.7
Dysmenorrhea	24	17	70.8	8 (0)	33.3	52.9
Hypermenorrhea	24	14	58.3	4 (0)	16.7	71.4
Metrorrhagia	23	5	21.7	1 (1)	4.4	100*
Dyspareunia (females)	26	12	46.2	1 (0)	3.9	91.7
Post-coital bleeding	30	3	10.0	0 (0)	10.0	100

SEROLOGIA POST TRACTAMENT

- 54.7% negativitza ELISA
- 24.3% negativitza ICT
- 84% DO decreix posttractament



CONCLUSIONS

- ESQUISTOSOMIASI **CRÒNICA** ÉS UNA INFECCIÓ **FREQÜENT** (P 36% VS 56%), **INFRADIAGNOSTICADA I DESATESA PEL SISTEMA SANITARI**, TOT I TENIR DISPONIBLE UN TRACTAMENT EFICAÇ en MIGRANTS LLARGA ESTADA (>15-20 ANYS) (**RETARD DIAGNÒSTIC**)
- **CONGLOMERAT DE SÍMPTOMES I COMPLICACIONS FREQÜENTS EN RELACIÓ A SEROLOGIA +:** PRESENTACIÓ CLÍNICA ÉS INESPECÍFICA, **VARIABLE, MULTISISTÈMICA** I MOTIVA **MOLTES CONSULTES AL SISTEMA SANITARI/E.--OPORTUNITATS PERDUDES=RETARD DIAGNÒSTIC**
- **LIMITACIÓ PROVES DIAGNÒSTIQUES SEROLÒGIQUES EN FASE CRÒNICA** (no disposem gold standard) **A CONSIDERAR LA CLÍNICA!!**
- LES SEVES COMPLICACIONS TENEN UN **ELEVAT COST SANITARI I IMPACTE EN LA QUALITAT DE VIDA**
- MILLOR **ESTRATÈGIA COST-EFFECTIVA ÉS TESTAR I TRACTAR PRECOÇMENT→CAL CRIBRATGE PRECOÇ**

ESTIMACIÓ POBLACIÓ AFECTADA PROBABLE ESQUISTOSOMIASI CRÒNICA

- **A la METRONORD** >20.000 persones procedents països endèmics→
> 5000-8000 persones infectades??
- **A CATALUNYA** > 75.000 persones procedents de països endèmics ?
> 18000-30000 persones infectades??
- **A EUROPA ?** 11.000.000 milions persones
960000-1.600.000??

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AGRAÏMENTS

LABORATORI METROPOLITANA NORD
HOSPITAL GERMANS TRIAS I PUJOL

 Fundació
Lluita contra les
Infeccions

Salut/Institut Català de la Salut/
Metropolitana Nord

Salut/  Germans Trias i Pujol
Hospital



anys Hospital
Germans Trias

