

THE LANCET Microbe

Supplementary appendix 2

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

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Appendix.

Table 1. References describing renal dysfunction or abnormalities in individuals with loiasis

Renal dysfunction or abnormalities	References
Hematuria	<ul style="list-style-type: none"> - Gentilini M, Domart A, Brumpt L, Hazard J, le Quintrec Y. [Filariose à <i>Loa loa</i> et protéinurie]. <i>Bulletin de la Société de pathologie exotique</i> 1963; 56: 230–40. - Fritel D, Bariety J, Gentilini M. [Loase et néphropathie. Etude anatomoclinique de trois cas]. <i>Med Afr Noire</i> 1970; 1: 13–5. - Barierty J, Barbier M, Laigre M-C, <i>et al.</i> [Protéinurie et loase. Etude histologique, optique et électronique d'un cas]. <i>Société médicale des hôpitaux de Paris</i> 1967; 118: 1015–25. - Ameer A, Haouri M, Touiti D, Beddouch A, Oukheira H. [Hématurie et filariose. Aspects pathogéniques: à propos d'une observation]. <i>Ann Urol (Paris)</i> 2000; 34: 110–1.
Proteinuria (or albuminuria)	<ul style="list-style-type: none"> - Gentilini M, Domart A, Brumpt L, Hazard J, le Quintrec Y. [Filariose à <i>Loa loa</i> et protéinurie]. <i>Bulletin de la Société de pathologie exotique</i> 1963; 56: 230–40. - Fritel D, Bariety J, Gentilini M. [Loase et néphropathie. Etude anatomoclinique de trois cas]. <i>Med Afr Noire</i> 1970; 1: 13–5. - Barierty J, Barbier M, Laigre M-C, <i>et al.</i> [Protéinurie et loase. Etude histologique, optique et électronique d'un cas]. <i>Société médicale des hôpitaux de Paris</i> 1967; 118: 1015–25. - Schneider J. [Problèmes diagnostiques et thérapeutiques de médecine tropicale dans la pratique médicale courante en France]. <i>Bulletin de la société de pathologie exotique</i> 1964; 57: 719–65. - Zuidema PJ. Renal changes in loiasis. <i>Folia Med Neerl</i> 1971; 14: 168–72. - Janssens PG, van Bogaert L, Tverdý G, Wanson M. [Réflexions sur le sort des microfilaires de <i>Loa loa</i> dans l'organisme humain parasité. Manifestations viscérales provoquées par leur infiltration dans les tissus]. <i>Bulletin de la Société de pathologie exotique</i> 1958; 4: 680–93. - Arborio M, Schill H, Neveux Y, <i>et al.</i> [Néphropathie et filariose à <i>Loa loa</i> traitée par ivermectine]. <i>Thérapeutiques antiparasitaires : communications</i>. 1995; 55
Glomerulopathies	<ul style="list-style-type: none"> - Fritel D, Bariety J, Gentilini M. [Loase et néphropathie. Etude anatomoclinique de trois cas]. <i>Med Afr Noire</i> 1970; 1: 13–5. - Pillay VKG, Kirch E, Kurtzam NA. Glomerulopathy associated with filarial loiasis. <i>JAMA</i> 1973; 225: 179–179. - Pakasa NM, Nseka NM, Nyimi LM. Secondary collapsing glomerulopathy associated with <i>Loa loa</i> filariasis. <i>American Journal of Kidney Diseases</i> 1997; 30: 836–9. - Pérez Pérez AJ, Sobrado J, Cigarrán S, Valdés R, González L, Courel M. [Filariasis <i>loa-loa</i> como causa de uremia terminal]. <i>Nefrologia</i> 1987; 7: 183–5. - Malik STA, McHugh M, Morley AR, Ngu J, Qureshi M, Wilkinson R. Filariasis (<i>Loa loa</i>) associated with membranous glomerulonephritis: demonstration of filarial antigen. <i>Kidney interactions</i> 1981; 20: 157–157. - Lukiana T, Mandina M, Situakibanza NH, <i>et al.</i> A possible case of spontaneous <i>Loa loa</i> encephalopathy associated with a glomerulopathy. <i>Filaria J</i> 2006; 5. - Katner H, Eugene Beyt B, Krotoski WA. Loiasis and renal failure. <i>South Med J</i> 1984; 77: 907–8. - Adebajol A O, Akinsola' A, Maizels3 RM, Cawston' TE, Haziernan' BL. Rheumatoid factor and rheumatoid factor isotypes in loiasis with and without accompanying glomerulonephritis. <i>Transactions of the royal society of tropical medicine and hygiene</i> 1992; 86: 667–9. - Abel L, Joly V, Yeni P, Carbon C. Apheresis in the management of loiasis with high microfilariaemia and renal disease. <i>Br Med J</i> 1986; 292: 24–5.
Nephrotic syndromes	<ul style="list-style-type: none"> - Stephens L, Peat D, Chiodini P. Nephrotic syndrome due to loiasis following a tropical adventure holiday: a case report and review of the literature. <i>Clin Nephrol</i> 2001; 56: 247–50. - Pereda PiA, Marcos GR, Plaza MV, Gonzales JC, Garcia EG. Complete remission of loiasis-associated nephrotic syndrome with collapsing glomerulopathy after diethylcarbamazine treatment. <i>Enf Emerg</i> 2010; 12: 155–8.
Remission of renal disorder after administration of antifilarial treatment	<ul style="list-style-type: none"> - Pereda PiA, Marcos GR, Plaza MV, Gonzales JC, Garcia EG. Complete remission of loiasis-associated nephrotic syndrome with collapsing glomerulopathy after diethylcarbamazine treatment. <i>Enf Emerg</i> 2010; 12: 155–8. - Hall C, Stephens L, Peat D, Chiodini P. Nephrotic syndrome due to loiasis following a tropical adventure holiday: a case report and review of the literature. <i>Clin Nephrol</i> 2001; 56: 247–50. - Zuidema PJ. Renal changes in loiasis. <i>Folia Med Neerl</i> 1971; 14: 168–72. - Janssens PG, van Bogaert L, Tverdý G, Wanson M. [Réflexions sur le sort des microfilaires de <i>Loa loa</i> dans l'organisme humain parasité. Manifestations viscérales provoquées par leur infiltration dans les tissus]. <i>Bulletin de la Société de pathologie exotique</i> 1958; 4: 680–93. - Fritel D, Bariety J, Gentilini M. [Loase et néphropathie. Etude anatomoclinique de trois cas]. <i>Med Afr Noire</i> 1970; 1: 13–5. - Abel L, Joly V, Yeni P, Carbon C. Apheresis in the management of loiasis with high microfilariaemia and renal disease. <i>Br Med J</i> 1986; 292: 24–5.
Transient increase in renal disorder after	<ul style="list-style-type: none"> - Fritel D, Bariety J, Gentilini M. [Loase et néphropathie. Etude anatomoclinique de trois cas]. <i>Med Afr Noire</i> 1970; 1: 13–5. - Cruel T, Arborio M, Schill H, <i>et al.</i> [Néphropathie et filariose à <i>Loa loa</i>. A propos d'un cas de réaction adverse à la prise d'ivermectine]. <i>Bulletin de la Société de pathologie exotique</i> 1997; 90: 179–81.

administration of antifilarial treatment	<ul style="list-style-type: none"> - Katner H, Eugene Beyt B, Krotoski WA. Loiasis and renal failure. <i>South Med J</i> 1984; 77: 907–8. - Gentilini M, Domart A, Brumpt L, Hazard J, le Quintrec Y. [Filariose à <i>Loa loa</i> et protéinurie]. <i>Bulletin de la Société de pathologie exotique</i> 1963; 56: 230–40. - Barierty J, Barbier M, Laigre M-C, et al. [Protéinurie et loase. Etude histologique, optique et électronique d'un cas]. <i>Société médicale des hôpitaux de Paris</i> 1967; 118: 1015–25. - Arborio M, Schill H, Neveux Y, et al. [Néphropathie et filariose à <i>Loa loa</i> traitée par ivermectine]. <i>Thérapeutiques antiparasitaires : communications</i>. 1995; 55.
Abnormal renal biopsy	<ul style="list-style-type: none"> - Pillay VKG, Kirch E, Kurtzam NA. Glomerulopathy associated with filarial loiasis. <i>JAMA</i> 1973; 225: 179–179. - Pakasa NM, Nseka NM, Nyimi LM. Secondary collapsing glomerulopathy associated with <i>Loa loa</i> filariasis. <i>American Journal of Kidney Diseases</i> 1997; 30: 836–9. - Hall C, Stephens L, Peat D, Chiodini P. Nephrotic syndrome due to loiasis following a tropical adventure holiday: a case report and review of the literature. <i>Clin Nephrol</i> 2001; 56: 247–50. - Pereda PiA, Marcos GR, Plaza MV, Gonzales JC, Garcia EG. Complete remission of loiasis-associated nephrotic syndrome with collapsing glomerulopathy after diethylcarbamazine treatment. <i>Enf Emerg</i> 2010; 12: 155–8. - Pérez Pérez AJ, Sobrado J, Cigarrán S, Valdés R, González L, Courel M. [Filariasis <i>loa-loa</i> como causa de uremia terminal]. <i>Nefrologia</i> 1987; 7: 183–5. - Malik STA, McHugh M, Morley AR, Ngu J, Qureshi M, Wilkinson R. Filariasis (<i>Loa loa</i>) associated with membranous glomerulonephritis: demonstration of filarial antigen. <i>Kidney interactions</i> 1981; 20: 157–157. - Katner H, Eugene Beyt B, Krotoski WA. Loiasis and renal failure. <i>South Med J</i> 1984; 77: 907–8. - Fritel D, Barierty J, Gentilini M. [Loase et néphropathie. Etude anatomoclinique de trois cas]. <i>Med Afr Noire</i> 1970; 1: 13–5. - Cruel T, Arborio M, Schill H, et al. [Néphropathie et filariose à <i>Loa loa</i>. A propos d'un cas de réaction adverse à la prise d'ivermectine]. <i>Bulletin de la Société de pathologie exotique</i> 1997; 90: 179–81. - Arborio M, Schill H, Neveux Y, et al. [Néphropathie et filariose à <i>Loa loa</i> traitée par ivermectine]. <i>Thérapeutiques antiparasitaires : communications</i>. 1995; 55. - Abel L, Joly V, Yeni P, Carbon C. Apheresis in the management of loiasis with high microfilariaemia and renal disease. <i>Br Med J</i> 1986; 292: 24–5.
<i>Loa loa</i> microfilariae in urine	<ul style="list-style-type: none"> - Barierty J, Barbier M, Laigre M-C, et al. [Protéinurie et loase. Etude histologique, optique et électronique d'un cas]. <i>Société médicale des hôpitaux de Paris</i> 1967; 118: 1015–25. - Fritel D, Barierty J, Gentilini M. [Loase et néphropathie. Etude anatomoclinique de trois cas]. <i>Med Afr Noire</i> 1970; 1: 13–5. - Katner H, Eugene Beyt B, Krotoski WA. Loiasis and renal failure. <i>South Med J</i> 1984; 77: 907–8.

Table 2. Prevalence of other comorbidities in the population study

	Total	Level of proteinuria				p-value*
		Negative	Traces	Lightly positive (+)	Highly positive (++ or +++)	
N. subjects (n, %)	990	555 (56.1%)	325 (32.8%)	89 (9.0%)	21 (2.1%)	
Haematuria (n, %)	990					< 0.0001
Negative or Traces	907 (91.6%)	529 (95.3%)	299 (92.0%)	68 (76.4%)	11 (52.4%)	
Positive	83 (8.4%)	26 (4.7%)	26 (8.0%)	21 (23.6%)	10 (47.6%)	
Schistosomiasis (n, %)	98	31	32	23	12	
Presence of eggs (urines)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	N/A
Positive serology (plasma)	6 (6.1%)	4 (12.9%)	0 (0.0%)	1 (4.3%)	1 (8.3%)	N/A
Stools examination (n, %)	58	24	22	10	2	
Hookworm presence	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	N/A
<i>Ascaris</i> presence	36 (62.1%)	16 (66.7%)	14 (63.6%)	5 (50.0%)	1 (50.0%)	0.81
<i>Trichuris</i> presence	39 (67.2%)	16 (66.7%)	13 (59.1%)	8 (80.0%)	2 (100.0%)	0.61

* Chi-2 for categorical variable (with Yates correction if $1 n_{ij} < 5$)

N/A: not applicable

Table 3. Distribution of the main variables of interest according to haematuria status

	Total	Level of haematuria				p-value*
		Negative	Traces	Lightly positive (+)	Highly positive (++ or +++)	
N. subjects (n, %)	990	895 (90.4%)	12 (1.2%)	24 (2.4%)	59 (6.0%)	
Sex-ratio (M/F)	1.67	1.8	1.4	1.0	0.8	0.010
Age in years (mean \pm SD)	50.8 \pm 14.8	50.5 \pm 14.7	61.5 \pm 9.8	54.9 \pm 16.5	51.6 \pm 15.9	0.023
<i>Loa</i> MFD status						0.25
Positive (n, %)	342 (34.5%)	301 (33.8%)	5 (41.7%)	12 (50.0%)	24 (41.7%)	
<i>Loa</i> MFD (mf/mL)						0.25
Arith. Mean \pm SD	2409.4 \pm 7398.5	2259.0 \pm 7259.6	5036.7 \pm 10 118.1	4944.6 \pm 10 852.9	3124.7 \pm 7069.9	
Median [ITQ]	0 [0-540]	0 [0-440]	0 [0-4615]	120 [0-3735]	0 [0-1160]	
Geom. Mean	1647	1707	1806	3981	2153	
<i>Loa</i> MFD categories (n, %)						0.29
0 mf/mL	648 (65.5%)	594 (66.4%)	7 (58.3%)	12 (50.0%)	35 (59.3%)	
1-4999 mf/mL	217 (21.9%)	194 (21.7%)	2 (16.7%)	7 (29.2%)	14 (23.7%)	
5000-14 999 mf/mL	82 (8.3%)	73 (8.2%)	1 (8.3%)	3 (12.5%)	5 (8.5%)	
\geq 15 000 mf/mL	43 (4.3%)	34 (3.8%)	2 (16.7%)	2 (8.3%)	5 (8.5%)	

Abbreviations: SD, Standard deviation; MFD, microfilarial density; ITQ, interquartile range; NC, not calculable; Arith, arithmetic; Geom., Geometric.

* Chi-2 for categorical variable (with Yates correction if $1 n_{ij} < 5$) and Kruskal-Wallis rank test for continuous variables.