

## **Supplementary webappendix**

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Supplement to: Birbeck GL, Molyneux ME, Kaplan PW, et al. Blantyre Malaria Project Epilepsy Study (BMPES) of neurological outcomes in retinopathy-positive paediatric cerebral malaria survivors: a prospective cohort study. *Lancet Neurol* 2010; published online Nov 4. DOI:10.1016/S1474-4422(10)70270-2.

### A Systematic Review of Neurologic Sequelae following Cerebral Malaria

A PubMed search using two keywords “epilepsy AND malaria” and “malaria AND neurologic sequelae” yielded 295 articles. Studies involving only adults, case reports and those with no information on neurologic outcome after discharge were excluded. Retrospective studies were included, even if there was no clear sampling frame. None of these studies included cerebral malaria retinopathy in the diagnostic criteria.

Study	Number of subjects <sup>1</sup>	Follow-up Period	Neurologic sequelae at discharge (%)	Sequelae at follow-up (%)	Sequelae	Predictors of Sequelae
Carme et al. 1993 <sup>1</sup>	58	9-27 months	9	50	Cortical Blindness Hypotonia Ataxia	Young age Depth of coma
Meremikwa et al 1997 <sup>2</sup>	39	3 weeks-3 years	28	27	Cortical blindness Speech disorders Motor dysfunction	Prolonged coma Focal Seizures Abnormal postures
Bondi 1992 <sup>3</sup>	62	12-16	18	55	Monoparesis	Severe seizures

<sup>1</sup> Survivors of the acute cerebral malaria episode

		months			Cortical blindness Speech disorders	Hypoglycemia
Brewster et al 1990 <sup>4</sup>	265	1-6 months	12	25	Hemiparesis Cortical blindness Aphasia Ataxia	Biphasic course Coma Anemia Seizures
Van Hensbroek et al 1997 <sup>5</sup>	418	1-6 months	23	4	Paresis Ataxia Hearing problems Visual problems Cognitive dysfunction	Depth of coma Multiple seizures Prolonged Coma High temperature Leukocytosis
Crawley et al 1996 <sup>6</sup>	58	1 month	7	0	Hemiparesis Spastic gait Cognitive dysfunction Speech abnormalities	Young age Status epilepticus

					Epilepsy	
Molyneux et al 1987 <sup>7</sup>	111	2 weeks-1 month	9	64	Hypotonia Hemiparesis Ataxia Tremor	Seizures Depth of coma Young age Hypoglycemia
Carter et al 2006 <sup>8-10</sup>	152	Varied (months)	n/a	11.8% 24% 9.2%	Language disorders neurocognitive impairments epilepsy	-----
Boivin et al 2007 <sup>11</sup>	44	6 months	n/a	21.4	Cognitive impairment (focused assessment)	Longer duration of coma Seizures
Ngoungou et al 2007 <sup>12-14</sup>	101	Months (varied)	7.9	19.8	Mental retardation Speech delay Frontal syndromes Epilepsy ADHD Hemiparesis	Family history of epilepsy Febrile seizure

					Movement disorders	
Idro et al 2006 <sup>15</sup>	143	≥ 20 months	23.8%	23.8%	Motor, speech/language, cognitive	Seizures, deep coma, focal deficits, age < 3 years, hypoglycemia
Idro et al 2010 <sup>16</sup>	30 (retrospective from subspecialty clinic)	Varied (months)	Not available	85.2%	Motor deficits  Speech regression  hearing loss  Behavioral problems  Epilepsy  Blindness  Cognitive impairment	Hyporeflexia on admission and focal neurologic deficits at 3 months post CM
John et al <sup>17</sup>	44	24 months	-----	26.3%	Cognitive impairment	-----

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