

326 Malaria vs. Bacterial Meningitis in Children with Spinal Tap in the Luanda Children's Hospital, Angola



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BACKGROUND

- In Sub-Saharan Africa, both malaria (M), and bacterial meningitis (BM) cause fever and central nervous system (CNS) disturbance.
- We studied their caseload per year, characteristics, outcome, and risk factors for poor outcome to better understand the clinical impact of suspected CNS infection in children.

METHODS

- A prospective study in the Children's Hospital in the capital of Angola.
- Spinal tap for children presenting with altered consciousness, convulsions, prostration, or meningism.
- Children 3 month to 15 years with confirmed discharge diagnosis in 2016-2017.

RESULTS 941 children, malaria in 56% (525), bacterial meningitis in 12% (116), epilepsy/convulsions in 9% (88), other infections in 6% (60). Patients' characteristics, outcomes and risk factors can be seen in Tables .



CHARACTERISTICS OF CHILDREN	ALL	MALARIA	BACTERIAL MENINGITIS	P VALUE
AGE in months, median (IQR)	48 (69)	60 (68)	28 (61)	< 0.0001
UNDERLYING ILLNESS, % n/N	11 % 68 / 637	5 % 19 / 374	24 % 23 / 97	< 0.0001
SICKLE-CELL DISEASE, % n/N	6 % 40 / 635	2 % 9 / 372	19 % 18 / 96	< 0.0001
DURATION OF ILLNESS in days, median (IQR)	3 (4)	3 (3)	4 (4)	< 0.0001
DYSYPNEA, % n/N	50 % 393 / 782	45 % 210 / 463	56 % 70 / 119	0.009
DEHYDRATION, % n/N	21 % 155 / 745	15 % 67 / 441	32 % 36 / 113	< 0.0001
MALNUTRITION, % n/N	23 % 177 / 765	17 % 75 / 447	33 % 38 / 115	0.0001

CONCLUSIONS

- In suspected CNS infection, malaria was the final diagnosis of most children.
- However, bacterial meningitis caused more deaths and neurological sequelae.
- Amendable factors, such as delay in treatment, dehydration, and malnutrition appeared as risk factors for poor outcome.

OUTCOME OF CHILDREN	ALL	MALARIA	BACTERIAL MENINGITIS	P VALUE
DEATH	16 % 150 / 941	7 % 35 / 525	41 % 47 / 116	< 0.0001
SEVERE NEUROL. SEQUELAE	6 % 45 / 733	1.5 % 7 / 476	15 % 8 / 54	< 0.0001
ANY NEUROLOGICAL SEQUELAE	14 % 93 / 655	4 % 19 / 443	33 % 11 / 33	< 0.0001
DEATH OR ANY NEUROL. SEQUELAE	27 % 243 / 897	11 % 54 / 514	55 % 58 / 105	< 0.0001



RISK FACTORS FOR DEATH OR NEUROL. SEQUELAE	RISK RATIO (95% CI)	P-VALUE	RISK RATIO (95% CI)	P-VALUE
AGE < 12 MONTHS	1.71 (1.02 – 2.88)	< 0.0001	1.26 (0.55 – 2.91)	0.58
DURATION OF ILLNESS > 3 DAYS	2.48 (1.68 – 3.64)	< 0.0001	2.15 (1.22 – 3.81)	0.008
MALNUTRITION	1.92 (1.20 – 3.05)	0.006	2.28 (1.17 – 4.44)	0.02
DEHYDRATION	1.92 (1.16 – 3.14)	0.01	2.39 (1.19 – 4.81)	0.01
BACTERIAL MENINGITIS VS. MALARIA			8.06 (4.44 – 14.65)	< 0.0001

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