

Accuracy of Three Prognostic Scales in Childhood Bacterial Meningitis

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Objective Compare the accuracy of the Glasgow Coma Scale, the Blantyre Coma Scale, and the Herson-Todd Scale in predicting dismal outcome of bacterial meningitis (BM).

Methods

- **Patients:** All children (723) with suspected BM at Luanda Children’s Hospital in 2005-08.
- **Outcome measure:**
Dismal outcome: combination of death, severe neurological sequelae (SeNeSe) and deafness (better ear’s threshold >80 dB), (SeNeSe: blindness, quadriplegia, hydrocephalus, or severe psychomotor retardation).
- **Statistical methods:** Basic programme for ROC and AUC analysis.

Results

- Acute BM in 491 children without underlying diseases, median age 10 months.
- Of the 403 identified bacteria, 175 (43%) were *Haemophilus influenzae* type b, 154 (38%) *Streptococcus pneumoniae*, 46 (11%) *Neisseria meningitidis*, and 28 (7%) other (mostly Gram-negative) bacteria.
- Mortality 36% (179). SeNeSe in 14% (43) and deafness in 12% (38) of 312 survivors. Dismal outcome in 51% (251).

Conclusions

- Glasgow and Blantyre coma scales are reasonably accurate in predicting dismal outcome in childhood bacterial meningitis, whereas the Herson-Todd scale is less so.
- Adding variables other than those in the Glasgow or Blantyre coma scales does not improve the prognostic accuracy.

Scale	Median scores (range)	Best cut-off point	Sensitivity (%)	Specificity (%)	Correct prediction of outcome (%)	Youden index	ROC area
Glasgow	12 (15-3)	12	81	67	74	0.48	0.78
Blantyre	4 (5-0)	4	71	74	72	0.45	0.77
Herson-Todd	4 (0-11)	4	60	69	65	0.29	0.68

