SPINAL TAPS VS. BACTERIAL MENINGITIS IN THE LUANDA CHILDREN'S HOSPITAL, ANGOLA

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Background

Bacterial meningitis (BM) still causes many deaths and long-term sequelae, especially in developing countries. Angola, a Sub-Saharan country, launched *Haemophilus influenzae* type b and 13-valent pneumococcal conjugate vaccines in 2006 and 2013, respectively. Previously Luanda Children's Hospital (HPDB) treated approximately 800 patients with probable BM yearly.

Methods

HPDB is a teaching hospital which attends 300 new patients daily. Spinal tap (ST) was performed for children presenting with altered consciousness, prostration, convulsions, meningism, bulging fontanelle and neonatal sepsis. Cerebrospinal fluid (CSF) leukocyte count, glucose and protein were measured routinely. Gram-stain and culture were performed if CSF leukocytes were $>10/\mu\text{L}$, or glucose $<25\text{ mg/dL}$, and for all neonates' CSF. This prospective surveillance study collected data of all STs in HPDB during one year (21.10.2016 – 20.10.2017).

Results

STs were performed on 2472 children of whom 1370 (55%) were male. BM was probable in 343 children, of whom 155 (45%) aged ≤ 30 days. Bacteria were detected in 226 CSF samples, causative agents being *Streptococcus pneumoniae* (n=33), *Klebsiella* sp. (n=23), *Streptococcus agalactiae* (n=16), *Escherichia coli* (n=15), *Staphylococcus aureus* (n=13) *Neisseria meningitidis* (n=11), *Haemophilus influenzae* (n=8), other Gram-positive (n=54), and Gram-negative (n=53) bacteria. At discharge, the other diseases diagnosed were malaria (31% of 1838), neonatal sepsis (26%), convulsions/epilepsy (7.9%), encephalitis/viral meningitis (2.9%), and tuberculous meningitis (1.8%).

Conclusions

Of all children presenting at HPDB, 2% had ST performed and of them, 14% were diagnosed with probable BM. Almost half of those were neonates. After introduction of conjugate vaccines in Angola, the number of BM in HPDB has lowered about 60%. Still, pneumococcus, meningococcus, and *Haemophilus* remain important causes of BM.

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