

**Results.** We identified 43 cases of suspected NS. The most common symptoms were blurred vision, headache, and tinnitus. All had a lumbar puncture (LP). Median days from LP to treatment initiation was 6—many starting on day of diagnosis. Fourteen patients (33%) required admission for treatment. Two patients declined therapy. IV PCN G was used in 93% of cases; one received IM ceftriaxone. Treatment was successful in 32 of 41 (78%) cases, with 23 of these (72%) managed as outpatients. Three cases were treatment failures for incomplete therapy adherence or equivocal response and uncertain diagnosis.

**Conclusion.** Without available IM procaine PCN, neurosyphilis is challenging to manage in vulnerable populations or those wishing to avoid inpatient admission. Employing a multidisciplinary, coordinated care approach can lead to successful treatment of NS using IV PCN in the outpatient setting.

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

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**Session:** 55. CNS Infections

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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 prevalence, characteristics, outcome, and risk factors for poor outcome to better understand the clinical impact of suspected CNS infection in children.

**Methods.** We conducted a prospective study in the Children's Hospital (HPDB) in the capital of Angola which attends 300 new patients daily. Spinal tap (ST) was performed for children presenting with altered consciousness, convulsions, prostration, or meningism. The analysis included children aged 3 months to 15 years with confirmed discharge diagnosis in 2016–2017.

**Results.** Of 941 children, the diagnosis was M in 56% (525), BM in 12% (116), epilepsy/convulsions in 9% (88), and other infections in 6% (60). Of all children, 16% (150/941) died, 6% (45/733) had severe, 14% (93/655) any neurological sequelae, and 27% (243/897) either died or had neurological sequelae. In children with M, the corresponding figures were 7% (35/525), 1.5% (7/476), 4% (19/443), and 11% (54/514). In children with BM, the figures were 41% (47/116), 15% (8/54), 33% (11/33), and 55% (58/105), respectively. Comparing with M, children with BM were younger (median age (IQR) 28 (61) vs. 60 (68) months,  $P < 0.0001$ ), had an underlying illness (23/97 vs. 19/374,  $P < 0.0001$ ), like sickle-cell disease (18/96 vs. 9/372,  $P < 0.0001$ ), longer duration of illness (4 (4) vs. 3 (3) days,  $P < 0.0001$ ), dyspnea (70/119 vs. 210/463,  $P = 0.009$ ), were dehydrated (36/113 vs. 67/441,  $P < 0.0001$ ), or malnourished (38/115 vs. 75/447,  $P = 0.0001$ ). Multivariate analysis revealed as independent risk factors for death or neurological sequelae age  $< 12$  months (OR 1.71, 95% CI 1.02–2.88,  $P < 0.0001$ ), duration of illness  $> 3$  days (2.48, 1.68–3.64,  $P < 0.0001$ ), malnutrition (1.92, 1.20–3.05,  $P = 0.006$ ), and dehydration (1.92, 1.16–3.14,  $P = 0.01$ ). When BM vs. M was included in the analysis, BM appeared as the most important risk factor (OR 8.06, 4.44–14.65,  $P < 0.0001$ ) and age lost its significance.

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

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### 327. Comparison of Clinical Outcome, Causative Serotypes, and Antimicrobial Susceptibilities Between Pneumococcal Meningitis and Pneumococcal Bacteremic Pneumonia in Adult Patients in the Republic of Korea

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**Background.** Pneumococcal meningitis (PM) is one of invasive pneumococcal disease (IPD) and is considered as a medical emergency with notable morbidity and mortality. This study was designed to characterize differences in clinical characteristics and outcomes, pneumococcal serotypes, and antimicrobial susceptibilities between PM and pneumococcal bacteremic pneumonia (PBP) in adult patients in the Republic of Korea (ROK) from a prospective observational cohort.

**Methods.** Adult IPD cases ( $\geq 18$  years) were prospectively collected from 20 hospitals participated in the pneumococcal surveillance program in the ROK from 2013 through 2015. Serotyping and antimicrobial susceptibility testing were performed by a multiplexed serotyping assay and Microscan system, respectively.

**Results.** During the study period, 30 cases of PM and 205 cases of PBP were compared. Serotypes 19A, 15B/15C, and 35B were the most prevalent among PM cases, whereas serotypes 3, 11A/D/E, and 19A were the most common serotypes in PBP. There were significant female predominance (46.7% vs. 2.3%,  $P = 0.022$ ), younger age (56.7% vs. 36.1%,  $P = 0.031$ ), less immunocompromised states (3.3% vs. 28.8%,  $P = 0.005$ ), less underlying chronic lung diseases (3.3% vs. 16.6%,  $P = 0.04$ ), and lower mortality rate (16.7% vs. 44.4%,  $P = 0.004$ ) in PM, compared with PBP. However, PM cases showed higher penicillin resistance (76.7% vs. 19.2%,  $P < 0.001$ ), and ceftriaxone resistance (53.3% vs. 13.4%,  $P < 0.001$ ), consistent with higher MDR prevalence in PM cases (76.7% vs. 53.2%  $P = 0.016$ ). All PM cases except for three cases received empiric or definite vancomycin treatment. Multiple logistic regression analysis showed that penicillin resistance (odds ratio [OR] 15.75, 95% confidence interval (CI) 3.82–64.72,  $P < 0.001$ ) and survival (OR 20.73, 95% CI 3.1–136.74,  $P = 0.002$ ) were significantly associated with PM.

**Conclusion.** This study indicates that adult PM showed favorable clinical outcomes, compared with PBP, despite of differences in clinical characteristics.

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### 328. National Expertise Group to Improve Management of Complex Encephalitis Cases

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**Background.** Incidence of infectious encephalitis in France is evaluated to be 0.5 to 1/100,000 inhabitants. That means encephalitis are rare infections, and not all physicians do not have expertise about this disease. In case of complex presentations, they may benefit from advices and guidance from a multidisciplinary group. The French infectious diseases society implemented a group of expertise in 2016 to address clinicians' difficulties with complex cases in a timely manner.

**Methods.** Experts were delegated by scientific societies (Infectious Disease, Microbiology, Neurology, Intensive care and Public Health) with regards to their expertise in brain infections. Any physician facing difficulties to manage a patient presenting as a complex case can ask for advice, using a specific e-mail address ([encephalite.spilf@infectiologie.com](mailto:encephalite.spilf@infectiologie.com)). They have to provide a detailed summary of the clinical case, together with all available biological and etiological results and, when possible, an access to brain images. The case file is then or circulated by mail or discussed in a conference call, within 48 hours. At the end of the discussion, a written answer is produced (detailed recommendations and justification). The traceability of the advice is kept by the French infectious diseases society for both teaching purposes and legal matters.

**Results.** So far we had to examine 32 cases, providing from various hospital in mainland France, French West Indies, and Polynesia: 15 from university hospital and 17 from nonuniversity hospitals. Questions (overlapping in some cases) were related to diagnosis procedure (12), to treatment (4), to interpretation of imaging (5), to management of failure (6), and interpretation of test results (10). Our answers were: investigation for autoimmune or inflammatory disease (15); investigation for tuberculosis and/or treatment (14); investigation for tumour (3); complementary tests for an unusual pathogen (10). Pertinence of the advices was adapted in 20 cases (30 evaluated).

**Conclusion.** Such a group seems to be useful, and the organization at a national-level works. It is also the opportunity to extend our network in the field of neurological infections, and to use the submitted cases as education material for young ID fellows.

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