A total of 142 children were included in the study (71 cases). The median age of cases and controls was 2.5 months (IQR: 1–72) and 2 months (IQR: 0.7–36) respectively (P = 0.157). A pathogen was detected in 38/71 (53.5%) children with the use of FA and in 16/71 (22.5%) in the control group (P < 0.001). In aseptic meningitis cases a virus was detected in 27/60 (45%) and in 11/64 (16.4%) controls (P < 0.001). Length of stay in cases and controls with aseptic meningitis was 5 days (IQR: 4–8) and 8 (IQR: 6–10) respectively (P < 0.001). The median duration of antimicrobials in cases was 4 days (IQR: 2–5.7) and 7 (IQR: 5–10) respectively (P < 0.001). The hospitalization cost was calculated in cases and controls 1.042 (IQR: 932–1372E) and 1.522 (IQR: 1.308–1.743E) respectively (P < 0.001).

Conclusion. The use of FA was able to reduce significantly the hospitalization days and the total cost comparing to the control group in children with suspected CNS infection.

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1400. Impact of a Multiplex Polymerase Chain Reaction Meningitis/Encephalitis Panel and Antimicrobial Stewardship Bundle on Antimicrobial Use in Patients with Suspected Meningitis or Encephalitis
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Background. Optimal treatment of meningitis relies on prompt diagnostic evaluation and initiation of appropriate antimicrobials. The meningitis/encephalitis panel (MEP) is a multiplex rapid polymerase chain reaction, with the ability to detect 14 community-acquired pathogens in 1 hour. The purpose of this study was to evaluate impact of the MEP on de-escalation of antimicrobials in adult inpatients with suspected meningitis at a large community teaching hospital.

Methods. This single-center retrospective quasi-experimental pre/post study included adults admitted for ≥48 hours and initiated on antimicrobial therapy for suspected meningitis. Those with healthcare-associated meningitis, immunosuppression, initiation of antimicrobials ≥48 hours prior to lumbar puncture (LP), and use of antimicrobials for another indication were excluded. The pre-group included patients admitted prior to MEP introduction. The post-group included patients with the MEP performed. An antimicrobial stewardship bundle consisting of a meningitis order set, provider education, and use of a real-time meningitis alert in clinical decision support software was also implemented in the post-group. The primary outcome was percentage of patients experiencing antimicrobial de-escalation ≥48 hours after LP. Secondary outcomes included time to de-escalation, total duration of antimicrobial therapy (DOT), and hospital length of stay (LOS).

Results. A total of 45 patients were included in the study (23 pre-group and 22 post-group). Baseline characteristics were similar between groups. The percentage of patients experiencing de-escalation of antimicrobials ≥48 hours after LP increased by 44% in the post-group (82% vs. 38%, P = 0.005). The overall median time to de-escalation of antimicrobials decreased by 35 hours [11.1 (IQR 5.6, 17.6) vs. 46.1 (IQR 18.4, 66.5); P = 0.002] and the median time to de-escalation after LP decreased by 38 hours [13.6 (IQR 8.3, 20.3) vs. 51.6 (IQR 44.2, 69.8); P < 0.001]. No statistically significant difference in hospital LOS or total DOT was seen.

Conclusion. Implementation of the MEP and antimicrobial stewardship bundle increased the percentage of patients de-escalated in 48 hours and decreased the time to de-escalation. However, this did not impact the total DOT or hospital LOS.

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1401. Minimal Cerebrospinal Concentration of Miltefosine Despite Therapeutic Plasma Levels during the Treatment of Amebic Encephalitis
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Background. Miltefosine is an alkylphosphocholine compound used primarily for the treatment of leishmaniasis that also demonstrates in vitro and in vivo anti-amebic activity against Acanthamoeba species. As such, recommendations for treatment of amebic encephalitis generally include miltefosine therapy. Data support a minimum amebicidal concentration (MAC) of at least 16 µg/mL is required for most Acanthamoeba species. Given the high mortality associated with amebic encephalitis and a paucity of data regarding miltefosine levels in the plasma and cerebrospinal fluid (CSF) in vivo, we sought to determine whether a patient being treated with oral miltefosine at a higher-than-recommended dose obtained therapeutic plasma and CSF concentrations.

Methods. A patient with brain-biopsy-confirmed Acanthamoeba encephalitis was initiated on miltefosine 50mg by mouth every 6 hours (q6h), a higher frequency than recommended in the scant available literature (which suggests doses of 50 mg every 8 hours). Plasma and CSF miltefosine concentrations were collected on day 7 of treatment. CSF was collected via an external ventricular drain over a period of 1 hour. The quantification of miltefosine was performed using a Waters Xevo TQ-S triple quadrupole mass spectrometer coupled with a Waters Acquity UPLC I-class system.

Results. The trough plasma and CSF concentrations (taken 8 hours post-dose) were 16.2 and 0.007 µg/mL, respectively, resulting in a miltefosine plasma to CSF ratio of 2370. Minimal Cerebrospinal Concentration of Miltefosine Despite Therapeutic Plasma Levels during the Treatment of Amebic Encephalitis

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of 2.440 ± 1 µg/mL. The patient had no adverse reactions during the initial course of miltefosine therapy, though ultimately succumbed to the disease.

Conclusion. This is the first report to describe plasma and CSF concentrations after administration of miltefosine 50 mg q48h for the treatment of amebic encephalitis. The administration of miltefosine 50 mg q48h resulted in plasma concentrations at the suggested MAC for *Acanthamoeba* spp. However, the miltefosine CSF concentration was extremely low compared with the plasma level and did not reach amebicidal concentrations. While miltefosine human brain parenchyma concentrations have yet to be described in the literature, this case questions if oral miltefosine is adequate to veritably treat patients with amebic encephalitis.

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1402. Long-Term Mortality and Epilepsy in Patients After Brain Abscess: A Nationwide Population-based Matched Cohort Study
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Background. The long-term outcome of brain abscess is unclear.

Methods. We used medical registries to conduct a nationwide population-based matched cohort study to examine the long-term risks of mortality and new-onset epilepsy in patients hospitalized with brain abscess in Denmark from 1982 through 2016. Comparison cohorts from the same population individually matched on age, sex, and residence were identified, as were siblings of all study participants (Figure 1). We computed cumulative incidences and hazard rate ratios (HRRs) for mortality and new-onset epilepsy among brain abscess patients, comparison cohorts and siblings. Population and appendicitis controls had similar characteristics and prognosis why only comparisons between brain abscess patients and population controls are detailed here.

Results. We identified 1,384 brain abscess patients with a median follow-up time of 5.9 years (IQR 1.1–14.2). The 1-year, 2–5-year, and 6–30-year mortality of patients after brain abscess was 21%, 16% and 27% when compared with 1%, 6% and 20% for matched population controls (Figure 2). Cox regression analyses adjusted for Charlson comorbidity index score showed 1-year, 2–5-year, and 6–30-year HRRs for mortality of 17.5 (95% CI 13.9–22.2), 2.61 (95% CI 2.16–3.16) and 1.94 (95% CI 1.62–2.31). The mortality in brain abscess patients compared with population controls was significantly increased regardless of age group except among subjects 80 years or older, and in both previously healthy individuals and immuno-compromised persons. Among the 30-day survivors of brain abscess (median follow-up 7.6 years [IQR 2.2–15.5]), new-onset epilepsy occurred in 32% compared with 2% in matched population controls. Cause-specific Cox regression analysis adjusted for stroke, head trauma, alcohol abuse, and cancer showed 1-year, 2–5-year, and 6–30-year HRRs for new-onset epilepsy of 155 (95% CI 78.8–304), 37.7 (95% CI 23.0–59.9), and 8.93 (95% CI 5.62–14.2) (Figure 3). Comparisons between sibling cohorts suggested no substantial effect of family-related factors on the long-term risk of death or epilepsy after brain abscess (Figure 4).

Conclusion. Brain abscess is associated with an increased long-term risk of mortality and new-onset epilepsy for several years after the acute infection.

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1403. Infectious Causes of Acute Meningitis Among Thai Adults: A University Hospital Setting
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Background. Acute meningitis is a medical emergency which needs immediate assessment and treatment. Knowing the epidemiology of acute meningitis may guide the physician for promptly empirical therapy as well as minimize morbidity and mortality. In Thailand, there are few studies regarding acute meningitis in adults and most of them have not been updated. We aimed to determine etiology, clinical manifestations, cerebrospinal fluid (CSF) findings and outcomes of patients with acute meningitis.

Methods. A retrospective cohort study was conducted among adult (age >15 years) patients with acute meningitis who were treated at Ramathibodi Hospital between 2013 and 2017. The list of the patients was retrieved from the hospital database using the International Classification of Diseases, 10th revision (ICD-10) codes. Comparisons of clinical presentations and laboratory investigations between patients with bacterial meningitis and those with non-bacterial meningitis were analyzed.

Results. A total of 89 patients were included. Of all, 48 (53.9%) patients were men and median age (interquartile range; IQR) was 49 (32.1–63.8) years. The most common coexisting condition was HIV infection (30%), receiving prednisolone (16.9%), and diabetes mellitus (15.7%). Causes of acute meningitis were *Cryptococcus neoformans* (37%), bacteria (31.5%), *Mycobacterium tuberculosis* (27%), and virus (4.5%). Common clinical presentations were fever (74%), headache (70.8%), and confusion (31.5%). Older age, higher proportion of patients with diabetes, lower proportion of HIV infection, higher median white blood cells (WBCs) in complete blood count (CBC), lower median platelet, higher median aspartate aminotransaminase, higher median alkaline phosphatase, higher median WBCs, and polymorphonuclear leukocytes (PMNs) percentage in CSF were found in patients with acute bacterial meningitis. By multivariate logistic regression, predicting factors of acute bacterial meningitis were WBCs in CBC (OR 1.02 per 100 cells/mm³ increased; 95% CI 1.01–1.04, P = 0.001), WBCs in CSF (OR 1.04 per 10 cells/mm³ increased; 95% CI 1.01–1.07, P = 0.012) and PMNs percentage in CSF (OR 1.21 per 5% increased; 95% CI 1.07–1.37, P