Highlights from IDWeek 2019

This year's edition of IDWeek took place in Washington, DC, USA, on October 2–6. John McConnell reports.

Trial of treatments for Ebola virus disease

The PALM trial is a randomised trial of investigational drugs to treat Ebola virus disease (EVD) that is taking place in the North Kivu and Ituri provinces of DR Congo. Initial findings were reported by Sabue Mulangu (Institut National de Recherche Biomedicales Kinshasa, Kinshasa, DRC; abstract 843). Patients with PCR-proven EVD were all treated according to standard of care plus allocation to either ZMapp (a monoclonal antibody; the control arm), remdesivir (a nucleotide analogue antiviral), mAb114 (a monoclonal antibody), or REGN-EB3 (also a monoclonal antibody). The primary endpoint was 28-day mortality compared with the control arm. The initial plan was to recruit 125 patients to each treatment arm, but on Aug 9 the data and safety monitoring board looked at data from the first 499 patients and recommended that only the mAb114 and REGN-EB3 arms continue. Mulangu reported findings from 673 patients. Overall, 290 patients died (43% mortality). 28-day mortality was 84 of 169 (50%) in the ZMapp control arm, 93 of 175 (53%) with remdesivir, 61 of 174 (35%) in the mAB114 arm, and 52 of 155 (34%) with REGN-EB3. The treatment effect of remdesivir did not differ from the control arm, but mAB114 (–15% treatment difference, 95% CI –25 to –2, p=0·007) and REGN-EB3 (–18%, –29 to –3, p=0·002) significantly improved survival compared with control.

Cefiderocol for nosocomial pneumonia

Cefiderocol is a siderophore cephalosporin with activity against multidrug-resistant Gram-negative bacteria. The drug has (since IDWeek) been approved by the US Food and Drug Administration for treatment of complicated urinary tract infections and is under consideration by the European Medicines Agency. Yuko Matsunaga (Shionogi, Florham Park, NJ, USA) presented the results of a phase 3, non-inferiority trial that compared cefiderocol with meropenem, both given intravenously for 7–14 days, in patients with nosocomial pneumonia caused by Gram-negative pathogens (abstract LB4). 148 patients were randomly assigned to receive cefiderocol and 150 to receive meropenem. For the primary endpoint of all-cause mortality at day 14 in the modified intention-to-treat population, 18 of 145 (12·4%) patients allocated to cefiderocol died versus 17 of 146 (11·6%) allocated to meropenem (treatment difference 0·8%, 95% CI –6·6 to 8·2), demonstrating non-inferiority of cefidererocol. The investigational drug was also comparable to meropenem for secondary endpoints, including all-cause mortality at 28 days (21% cefiderocol *vs* 20·5% meropenem). Adverse events were assessed at 28 days and were similar in the two treatment arms—eg, treatment-emergent adverse events occurred in 130 of 148 (87·8%) allocated to cefiderocol versus 129 of 150 (86%) allocated to meropenem (difference 1·8%, 95% CI –5·8 to 9·5).

Reducing antibiotic use in patients with community-acquired pneumonia

Tejal Gandhi (University of Michigan, Ann Arbor, MI, USA) presented findings from a retrospective cohort study showing a reduction in antibiotic use in patients hospitalised with community acquired pneumonia (CAP) after a stewardship programme was introduced (abstract 2893). From 2016 to 2018, 43 hospitals in Michigan received a phased programme of interventions to encourage treatment of CAP for only 5 days. From April 2017 to October 2018, 4769 patients were eligible for 5 days of treatment. Between the two dates, the proportion of eligible patients who received 5 ± 1 days of antibiotics increased from 181 of 914 (19·8%) to 207 of 670 (30·9%), a relative difference of 56·1% (p=0·01). This improvement was not accompanied by an increase in adverse events such as post-discharge deaths or readmissions.

Monoclonal antibody to prevent *Staphylococcus aureus* pneumonia?

There is a pressing need for alternatives to antibiotics, such as monoclonal antibodies, to prevent and treat bacterial infections, but their path to routine clinical use can be complicated. Suvratoxumab is a monoclonal antibody that neutralises *Staphylococcus aureus*. Bruno Francois (CHU Dupuytren Limoges, Limousin, France) reported the findings of a randomised trial in which suvratoxumab (96 patients) was compared with placebo (100) for prevention of *S aureus* pneumonia in mechanically ventilated patients colonised with the bacteria (abstract 2839). 30 days after a single infusion of study drug or placebo, the incidence of pneumonia was 26% in the placebo group versus 17·7% with suvratoxumab (31·9% relative risk reduction, 95% CI –7·5 to –56·8, p=0·166). Adverse events did not differ between groups. Despite these disappointing findings, Francois indicated that development of suvratoxumab in the patient population would continue

John McConnell