Abstract:

The antibiotic meropenem is commonly administered to patients with sepsis and septic shock. The aim of this study was to conduct a meta-analysis to evaluate the clinical efficacy and safety of continuous compared to intermittent meropenem infusion for the treatment of sepsis. Electronic databases such as PubMed, EMBASE, Cochrane Library, and China National Knowledge Infrastructure (CNKI) were researched to collect clinical trials comparing continuous and intermittent infusion of meropenem in patients with sepsis. After data extraction and quality assessment of the included studies, Stata v. 12.0 software (Stata Corporation LLC, College Station, USA) was used for a meta-analysis of mortality, clinical cure, microbiological eradication, and safety. Seven studies with a total of 1,191 participants met the inclusion criteria and were included in the meta-analysis. The meta-analysis showed that continuous meropenem infusion was superior to intermittent infusion in terms of mortality (combined risk ratio (RR) = 0.66, 95% confidence interval (95% CI) = 0.46-0.98, p = 0.03), clinical cure rate (combined RR = 1.15, 95% CI = 1.02-1.30, p = 0.026) and microbiological eradication (combined RR = 1.20, 95% CI = 1.01-1.42, p = 0.04), although it may increase the incidence of some adverse events (AEs). Compared with intermittent dosing, administration of meropenem antibiotics through continuous infusion in patients with sepsis is associated with decreased hospital mortality, increased clinical cure rates and greater microbiological eradication. Further high-quality studies should be conducted to confirm our findings.

Reference: