Multiple drugs

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Lack of efficacy and off label use: 9 case reports

In a retrospective study of 24 patients conducted between 1 May 2012 and 1 May 2017 at a children's hospital in China, 9 patients (6 boys and 3 girls) aged 1 month–3 years and 8 months were described, who exhibited lack of efficacy during treatment with amikacin, cefoperazone/sulbactam [sulperazone], vancomycin, levofloxacin, meropenem or tigecycline for ventilator-associated pneumonia (VAP). Additionally, all the 9 patients received off-label treatment with tigecycline for VAP.

The patients, who had congenital heart disease (CHD; 6 patients), cerebral dysplasia (1 patient), drowning (1 patient) and haemophagocytic syndrome (HPS; 1 patient), were hospitalised. In hospital, they underwent open heart surgery with cardiopulmonary bypass (CPB) for CHD. The patients received prior drug reatment with meropenem, piperacillin/tazobactam, cefoperazone/sulbactam or levofloxacin for 3–26 days. All the patients were admitted to the intensive care unit (ICU); and were placed on mechanical ventilation for 5−44 days. Subsequently, they developed VAP along with catheter infection or blood infection. Therefore, all the 9 patients were initiated on off-label treatment (targeted or empirical) with tigecycline vial (each containing 50mg of dry powder) for VAP. Tigecycline was administered intravenously (loading dose of 1.5–2 mg/kg and maintenance dose of 1 mg/kg) after being dissolved in sodium chloride [normal saline] and infused over 1 hour. The length of tigecycline treatment was 4.5–19.5 days. The patients then received treatment with vancomycin and cefoperazone/sulbactam (1 patient), levofloxacin (1 patient), meropenem (1 patient), amikacin and cefoperazone/sulbactam (1 patient) or cefoperazone/sulbactam (4 patients) for VAP; however, they exhibited lack of drug effect. Also, all the 9 patients exhibited a lack of drug effect during treatment with tigecycline for ventilator-associated pneumonia (VAP). The patients remained in ICU for 9–60 days.

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