Sir,

Right-sided infective endocarditis (RSIE) is seen in 5-10% of IE cases and is commonly associated with intravenous drug use (IVDU) in developed nations. However, the Indian population has a lesser incidence of IVDU, but Indian data are limited to two case series from the 1990s. We reviewed all RSIE cases admitted to the Intensive Care Unit (ICU) of a tertiary-care academic medical center in India from January 2010 to December 2014. All patients >18 years with a diagnosis of IE by the modified Duke criteria were included in the study. Patients discharged against medical advice and pregnant females were excluded from the study. During this period, 96 patients were admitted to the ICU with IE, with 11 patients (11.5%) having RSIE. Median age was 33 (28-53) years with 4 (36.4%) males. Median Charlson age-comorbidity index was 1 (0-3) and no patient had an immunocompromised state, history of alcohol abuse, IVDU, central venous catheters, or implantable cardiac defibrillators at the time of presentation or diagnosis. Nine (81.8%) and 10 (90.1%) of the 11 patients presented with fever and a new cardiac murmur; however, vascular and immunological phenomena were seen only in 4 (36.4%) and 1 (9.1%) patients, respectively. Eight (72.7%), 2 (18.2%), and 1 (9.1%) patients had tricuspid valve (TV), pulmonary valve, and bivalvular involvement, respectively. Median vegetation size was 2.0 cm (1.3-2.1) × 0.8 cm (0.5-1.4). Staphylococcus aureus was the most common pathogen (5 patients, 45.5%), with 2 (18.2%) being methicillin-resistant S. aureus (MRSA). TV and pulmonary valve regurgitation were noted in 8 (82.7%) and 6 (54.5%) patients, respectively. Acute kidney injury, septic shock, acute respiratory distress syndrome, and decompensated heart failure were noted in 2 (18.2%), 3 (27.3%), 2 (18.2%), and 1 (9.1%) patients, respectively. Median ICU stay was 7 (3-16) days. Medical therapy was successful for 8 (72.7%) patients, with 2 (18.2%) requiring surgical resection and TV replacement.

The Asian population is unique in its inherently low incidence of IVDU, with RSIE incidence of <9%.[1-3] Clinically, fever and a new cardiac murmur are common presenting features with a low incidence of vascular and immunological phenomena. [3] S. aureus continues to be the leading pathogen in India and Asia, with about 40% of MRSA in our study, demonstrating an etiological shift.[2,3] Early surgical therapy is often recommended for aggressive infection with Staphylococcus and Streptococcus species.[1,4] The European Society of Cardiology guidelines recommend avoiding surgery except in cases of right heart failure, difficult to eradicate organisms, vegetations >20 mm, all refractory to medical therapy.[1,4] Older Indian literature demonstrated a higher mortality of about 30%, but our study showed a significant decrease to 9%, which is comparable with current global literature.[1,5] In summary, we present an exclusive Indian RSIE series in over 25 years, which is also the first dedicated ICU RSIE study. During this period, there has been a significant evolution in the microbiological and antimicrobial spectra and advances in diagnostic and management techniques, leading to improved patient care. We highlight the changes in etiology and risk factors and demonstrate improvement in outcomes and mortality in comparison to prior studies.[2,3]

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Conflicts of interest

There are no conflicts of interest

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REFERENCES

1. Akinosoglou K, Apostolakis E, Marangos M, Pasvol G. Native valve right sided infective endocarditis. Eur J Intern Med 2013;24:510-9.
2. Grover A, Anand IS, Varma J, Choudhury R, Khattri HN, Sapru RP, et al. Profile of right-sided endocarditis: An Indian experience. Int J Cardiol 1991;33:83-8.
Sir,

We report a case of ventilator-associated pneumonia caused by extensive drug resistant (XDR) Pseudomonas aeruginosa managed effectively by polymyxin-B and doripenem combination.

A 34-year-old, nonsmoker male, from Pune, was transferred to our department from another hospital with a clinical diagnosis of hospital-acquired pneumonia with underlying respiratory failure. He was receiving treatment for H1N1 pneumonitis, where he clinically worsened and transferred to another hospital before shifting to our setup, where high-resolution computed tomography (HRCT) was performed which showed the bilateral dense multilobar shadow. He has received meropenem (500 mg q8 h) and amikacin (500 mg OD) for 5 days.

During admission to our department, he was in acute respiratory distress syndrome (ARDS), already tracheostomized, mechanically ventilated with fever (38.8°C) and leukocytosis (32,000/mm³). His serum creatinine was 1.4 mg/dl started empirically on meropenem (1 g q8 h) as 30 min infusion and vancomycin (1 g q12 h). We immediately performed a fiberoptic bronchoalveolar lavage in all the involved pulmonary lobes and an MDR P. aeruginosa >10⁵ CFU/mL was isolated in every sampled pulmonary site. This strain was susceptible only to colistin as per Vitek-2 report. E-test was asked for meropenem, doripenem, and colistin. Minimum inhibitory concentration (MIC) values were 1, 8, and 16 mg/L for colistin, doripenem, and meropenem, respectively.

We changed the antibiotic therapy in the patient to intravenous polymyxin-B 7.5 lakh units 12 hourly and doripenem 1 g 8 hourly as 4 h infusion.

The patient became afebrile on day 3 and sustained defervescence was observed after 7 days. He was weaned off ventilator support on day 4, continued on polymyxin-B and doripenem for 14 days. Repeat HRCT was performed on day 13 post hospital admission which showed bilateral resolution of shadows. Serum creatinine on day 14 of polymyxin therapy was 1.2 mg/dl. After 10 days of stay in our intensive care unit, the patient was transferred to a ward where, after 5 days, he was discharged to his home. No adverse events were reported; in particular, nephrotoxicity was not observed.

We used polymyxin-B and doripenem combination therapy based on the results published by Rigatto et al which showed that the combination of polymyxin-B with carbapenem lacking in vitro activity, was able to significantly reduce the risk of mortality in critically ill patients infected by XDR Acinetobacter baumannii or P. aeruginosa.

The choice of doripenem over meropenem was driven by the E-test report which showed lower MIC value for doripenem.

The pharmacokinetic edge of polymyxin-B over colistin and renal independent dosing is well understood in recent literature, which influenced our choice of combination therapy.

Cheah et al. recently showed the importance of adaptive resistance in bacterial regrowth during polymyxin treatment and recognized the role of combination regimen as most effective.