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MODERN ASPECTS OF MANAGING SEPTIC SHOCK CAUSED BY RESISTANT PATHOGENS (CLINICAL CASE PRESENTATION)

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Septic shock represents the most severe clinical manifestation of sepsis, characterized by systemic infection, hemodynamic instability, microcirculatory dysfunction, and multiple organ failure. Mortality rates range between 30% and 40%, with resistant pathogens significantly complicating therapeutic management and worsening patient outcomes. Multidrug-resistant (MDR), extensively drug-resistant (XDR), and pandrug-resistant (PDR) bacteria, particularly Gram-negative species such as *Klebsiella pneumoniae, Pseudomonas aeruginosa*, and *Acinetobacter baumanii*, pose critical challenges in clinical practice.

This report presents the clinical case of a 31-year-old male patient with septic shock caused by pandrug-resistant *Klebsiella pneumoniae*. The patient had been transferred from Turkey after a month of rehabilitation. Upon admission, the patient's condition was severe, involving hypoxic brain injury, coma, and multiple pressure ulcers. He was mechanically ventilated via tracheostomy and exhibited signs of sepsis with multi-organ involvement. Initial empirical therapy included piperacillin-tazobactam and amikacin, later adjusted based on microbiological results. Cultures revealed pandrug-resistant *Klebsiella pneumoniae* in blood and multidrug-sensitive *Pseudomonas aeruginosa* in urine, sputum, and pressure ulcer samples, all of which were susceptible to colistin. Therapy was tailored accordingly, with prolonged infusion of beta-lactams and the addition of colistin. Strict infection control measures—including patient isolation, invasive device replacement, hand hygiene protocols, and environmental disinfection—were implemented to prevent nosocomial spread.

Following targeted treatment, the patient showed significant clinical improvement: stabilization of hemodynamics, cessation of vasopressor support, normalization of temperature, and neurological recovery. These outcomes underscore the importance of timely microbiological diagnosis, antibiotic stewardship, and comprehensive infection control in managing septic shock caused by resistant pathogens. In conclusion, the rise of pandrug-resistant organisms severely limits available antibiotic options and increases the mortality risk for septic shock patients. However, integrative management strategies, combining precise antimicrobial therapy, rigorous infection control, and multidisciplinary care, can improve prognosis even in the face of highly resistant infections.

Keywords: septic shock, antibiotic resistance, PDR pathogens, infection control, Klebsiella pneumoniae