Chryseobacterium indologenes bacteremia: a single-center case series

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Chryseobacterium indologenes (C. indologenes) is a rare pathogen in humans and is not normally present in the human microflora although it is widely distributed in nature. C. indologenes can cause various types of infections, such as bacteremia, pneumonia, meningitis, and artificial shunt infection, especially in those who are hospitalized with long-term indwelling devices and prolonged exposure to broad-spectrum antibiotics. We retrospectively analyzed bacteremia due to C. indologenes diagnosed from January 2016 to December 2020 in a 642-bed university-affiliated acute care hospital. We identified four cases of C. indologenes bacteremia which were defined by the isolation of C. indologenes in one or more blood cultures (Table 1). Median age was 66.8 years (range: 59–72). Two patients had been diagnosed with solid organ malignancy and all patients had intravascular indwelling devices at infection onset. All patients had received broad-spectrum antibiotics within the preceding month. Klebsiella pneumoniae was concurrently identified in one case. The sources of bacteremia were pneumonia and chemoport (one case each), and two cases were not identified. Definitive therapy was based on levofloxacin (two cases), carbapenems and piperacillin-tazobactam (one case each). The median duration of therapy was 14.5 days (range: 7–25) and the all-cause 30-d mortality rate was 25.0% (1/4), considered infection-related. Regarding the susceptibility profile of C. indologenes isolates, trimethoprim/sulfamethoxazole showed the best in vitro activity (100.0%, 4/4), followed by ciprofloxacin and cefepime (75.0%, 3/4). All the tested isolates were resistant to cefotaxime (100%, 4/4) and colistin (100%, 2/2), and resistance to carbapenems (75.0%, 3/4 for imipenem and 100.0%, 2/2 for meropenem), aminoglycosides (75.0%, 3/4) and tigecycline (75.0%, 3/4) were common. Although the low number of patients, our report shows the clinical and microbiological features of C. indologenes bacteremia. All tested isolates in our center remained susceptible to trimethoprim/sulfamethoxazole, levofloxacin and cefepime.

Table 1. Clinical and microbiological characteristics, therapeutic regimens and outcome of reviewed cases of *Chryseobacterium indologenes* bacteremia.

Case	Gender/age (y)	Comorbidities	Prior antibiotic therapy*	Indwelling devices	Concurrent microorganism	Source	Antibiotic therapy	Duration of therapy (days)	outcome
1	F/72	Chemotherapy due to rectal adenocarcinoma	yes	PVC	none	Unknown	Piperacillin-tazobactam	8	clinical and microbiological response
2	M/59	Prolonged ICU admission, mechanical ventilation, TPN	yes	PVC urinary catheter	*K. pneumoniae*	Respiratory	Meropenem plus teicoplanin	18	death due to septic shock
3	M/67	Prolonged ICU admission, mechanical ventilation, ESRD on hemodialysis, IgA nephropathy, heart failure	yes	PICC, PVC, dual lumen catheter perm catheter urinary catheter tracheostomy tube	none	Unknown	Levofloxacin	25	death due to septic shock
4	M/69	Chemotherapy due to colon cancer, short bowel syndrome	yes	chemoport PVC	none	Chemoport	Levofloxacin	7	clinical and microbiological response

ESRD: end stage renal disease, F: female, M: male, PICC: peripherally inserted central catheter, PVC: peripheral venous catheter

*Within the 30 days prior to the onset of bacteremia