

Microbiological and Clinical Evaluation A Rare Cause of Infection, *Raoultella planticola*

Tayfur DEMIRAY¹, Mehmet KOROGLU^{1,2}, Ahmet OZBEK^{1,2}, Mustafa ALTINDIS^{1,2}

¹ Sakarya University Education and Research Hospital, Clinical Microbiology Laboratory, Sakarya, TURKEY

² Sakarya University Faculty of Medicine, Department of Medical Microbiology, Sakarya, TURKEY

Background

R. planticola was thought to be a low virulence organism (1). However multidrug and carbapenem resistant isolates of *R. planticola* emerged from different regions of the world (2,3). We aimed to evaluate different *R. planticola* infections detected in our hospital according to microbiological and clinical aspects and to determine the risk factors for nosocomial and community acquired *R. planticola* infections.

Materials and Methods

R. planticola isolates from different clinical specimens were retrospectively evaluated between the period of January 2011 and July 2015 in a university hospital. Vitek 2[®] (Biomérieux, France) was used for identification and antimicrobial susceptibility testing. Data of patients with *R. planticola* infection were collected retrospectively from hospital records.

Results

R. planticola constituted 0,52% (n=42) of all pathogens reported. Most *R. planticola* isolates were isolated from blood samples (n=24) as pathogen of blood stream infections (Table). According to susceptibility testing, ampicillin, cefuroxime, cefuroxime-axetil and piperacilline were least effective against *R. planticola*. Carbapenems and aminoglycosides were the most affective antimicrobial agents. Extended spectrum beta-lactamases were detected in seven of the isolates, five from blood culture samples and two from urine culture sample. Three isolates from blood stream infections were also resistant to carbapenems.

There were no significant differences with ages and genders of the patients in respect to the origin of the infection whether nosocomial or community-acquired ($p>0.005$). Nosocomial *R. planticola* infections constituted 80,9% (n=34) of the all *R. planticola* infections. Most common infection type was blood stream infections (BSI), which all BSI were nosocomial origin ($p<0,005$). Presence of indwelling catheter 64,3% (n=27) and intensive care unit stay 64,3% (n=27) were the most common detected risk factors ($p<0,005$). Diabetes mellitus 30,9% (n=13) and chronic renal insufficiency 28,5% (n=12) were commonly accompanied the *R. planticola* infections ($p>0,005$).

Conclusion

R. planticola infections may not be referred as low virulent. Challenging infections caused by *Raoultella* spp. will probably become concern of clinicians as well as the microbiologist like those of multidrug resistant *Klebsiella* spp.

Table. Demographic and clinical data about *R. planticola* infections.

	<i>R. planticola</i> Infections (n)	Nosocomial	Community-Acquired	p value
Age				
1-50 years	11	9	2	0,891
50-70 years	8	6	2	
over 70 years	23	19	4	
Sex				
Female	20	15	5	0,445
Male	22	19	3	
Sample				
Blood	24	24	0	0,001
Sputum/Tracheal Aspiration	6	3	3	
Wound	1	0	1	
Urine	11	7	4	
Risk Factors				
Indwelling Catheter	27	27	0	0,003
ICU Stay	27	27	0	
Surgery	6	6	0	
Steroid Use	4	3	1	
Prematurity	3	3	0	
Concomitant Dis.				
Malignancy	8	7	1	0,372
Diabetes Mellitus	13	9	4	
Hipertansion	6	3	3	
Chronic Renal Insufficiency	12	10	2	
Coronary Artery Disease	4	4	0	
Cerebrovascular Disease	3	3	0	
Chronic Obstructive Lung Disease	5	3	2	

Key words

Raoultella planticola; nosocomial infections; blood stream infections; risk factors

References

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