ENTEROBACTER. HORMAECHEI : NEWBORN’S INFECTION

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Introduction

.Enterobacter hormaechei was proposed as a new species, and has been isolated from blood, wounds, and sputum of adult hospital patients, causing nosocomial bloodstream infections in the last decade, little is known about their virulence-associated properties. It is very rare in the newborn.

Materials and methods

- We report here four cases of E. hormaechei’s infection;
- It’s the first time in our unit: newborn intensive care unit, University Hospital, Mohamed VI, Marrakesh.

Results

- There were five newborns aged between eight hours and ten days, two of them born from twin pregnancies. Gestational age was less than thirty-six weeks of amenorrhea in four cases. Admitted for suspicion of early-onset neonatal sepsis. Three case-patients were male (table 1).
- All patients had risk factors for early-onset neonatal sepsis. The clinical presentation was variable, respiratory distress was found in four patients representing the most frequent sign.
- Four infants were placed on assisted ventilation. All the patients were given intravenous fluids through and were receiving empiric antimicrobial therapy; based on ampicillin and an aminoglycoside in three patients, a third-generation cephalosporin with aminoglycoside had been given to two cases. A first negative blood culture that was made in admission was obtained.
- Clinical signs of sepsis appeared between three days and seven days of antibiotic therapy, an infectious assessment was made showing a rise in C-reactive protein and leukocytosis predominantly neutrophilic in four patients and leuko neutropenia in a single neonate

- E. hormaechei with multi-drug resistant; was isolated at the blood culture in all cases.
- Two patients had a central vascular catheter (CVC) in place at the time the nosocomial infection was diagnosed . A newborn had presented on its third day of life a cutaneous necrosis, The swabbing of the necrosis also isolated an E. hormaechei. Two of the five babies were clinically stable before E. hormaechei was detected
- Treatment was based on the combination of Imipenem and Amikacin. The evolution was favorable in two patients while three patients died.

Enterobacter hormaechei

Table 1. Clinical characteristics of case patients

Case patient	Clinical characteristics					
	age of admission (days)	birth weight (g)	gestational age (wk)	comorbidity	evolution	others
1	1	2250	35	-	death	-
2	1	1000	30	Patent ductus arteriosus	death	twin pregnancies
3	3	2600	33	-	death	-
4	1	1650	35	-	favorable	twin pregnancies
5	10	3100	37	-	favorable	-

Discussion

- Enterobacter hormaechei was identified as a unique species in 1989 , since then a few reports of clinical infection due to this organism have been published, he has been shown to be of clinical significance by causing nosocomial infections
- E. hormaechei is a Gram-negative bacterium within the Enterobacter cloacae complex. He is propagate via horizontal transfer and is often associated with extended spectrum beta-lactamase production, which limits the therapeutic options . Predisposing factors for infection with Enterobacter species include immunosuppression, having a significant underlying illness, having an indwelling catheter or having undergone a recent invasive procedure, hospitalization in an intensive care unit, and receiving antimicrobials.
- Environmental contamination and lapses in infection control may have facilitated transmission from patient to patient by health care workers
- No deaths related to E. hormaechei bacteremia occurred in a series of six newborn at neonatal intensive care units in Brazil. The same was observed by Wenger et al. 2 in a series of five E. hormaechei bacteremia cases in premature infants
- three patients died in our series.

Conclusion

E. hormaechei appears as an emerging agent responsible for healthcare-associated infections, particularly in intensive care unit. He can infect vulnerable hospitalized patients, especially premature infants. It can be transmitted from one patient to another when the infection control techniques are inadequate. Carbapenems are the first-choice antibiotics for severe infections caused by E. hormaechei.