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## Introduction

*Aeromonas* species are renowned enteric pathogens with virulence determinants linked to human diseases, such as gastroenteritis, skin, soft-tissue and septicemia, the recent concern of resistance has emerged in this organism, especially the presence of carbapenemases. We describe a case series of emerging carbapenem resistance *Aeromonas* species infection in Cali, Colombia.

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## Methods

We reported 20 cases from 2012-2016. Clinical and microbiological data were analyzed. Phenotypic detection of resistance was identified using VITEK 2 system (bioMérieux), MicroScan WalkAway plus System and Rapidec NP-CARBA. A multiplex qPCR assay was performed in 5 isolates to identify genes encoding major carbapenemases (*bla*<sub>KPC</sub>, *bla*<sub>VIM</sub>, *bla*<sub>IMP</sub>, *bla*<sub>NDM</sub>).

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## Results

Clinical and demographic characteristics are shown in table # 1. All patients in ICU were treated with empiric carbapenems. Molecular test for detection of primary carbapenem resistant genes was done to 5 patients. None of the results were positive. Rapidec NP-CARBA was positive for one of these five patients (another type of carbapenemase).

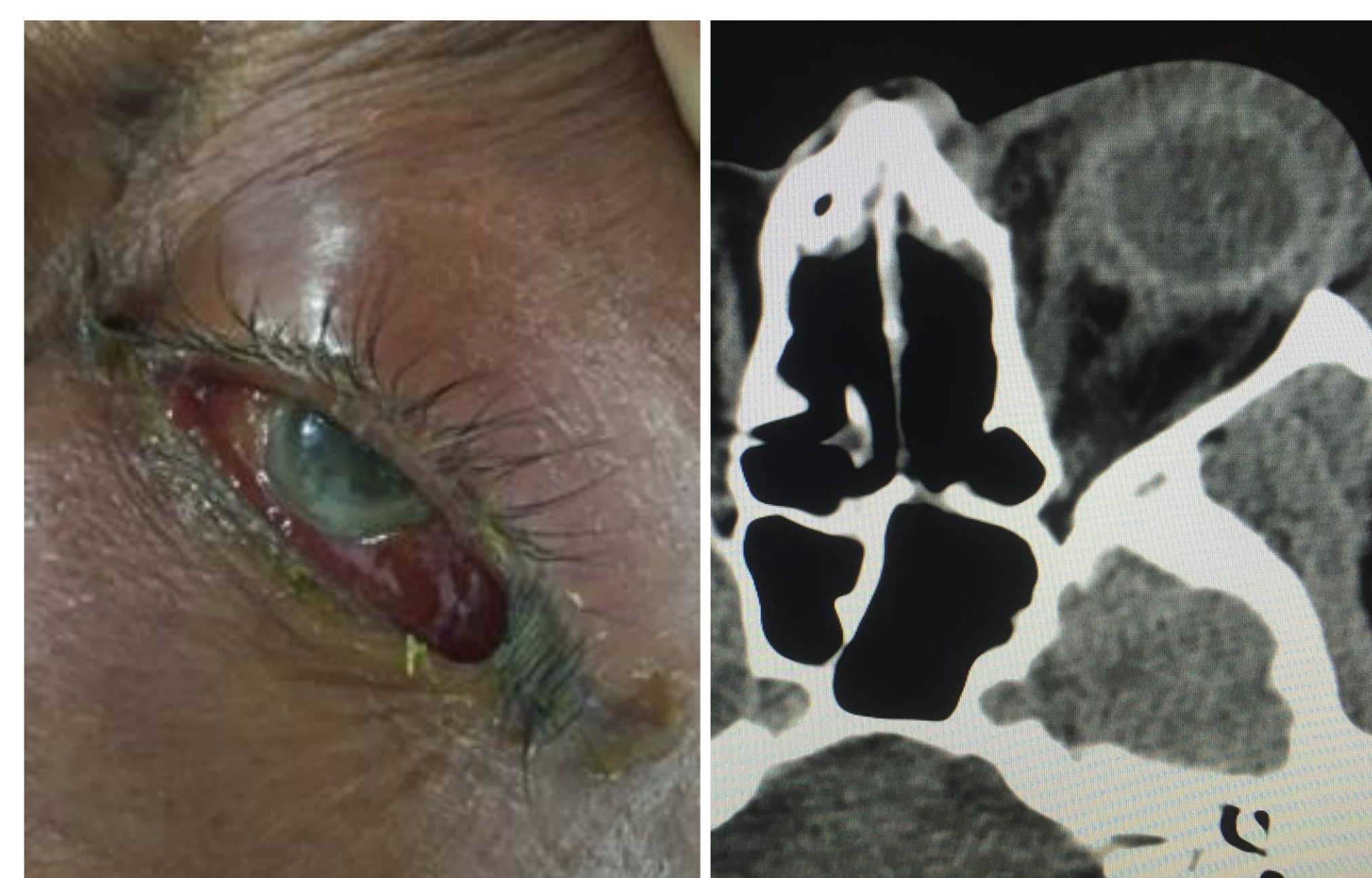
## Results

Table # 1 Clinical Characteristics of the patients

Characteristics	Cases (n=20)	%
Age (Median)	32	RI (29-64)
Male	11	55%
Immunosuppression	9	45%
Cardiovascular disease	5	25%
Liver Disease	3	15%
Organ transplant	3	15%
Malignancy	3	15%
Diabetes	2	10%
Renal Disease	2	10%
HIV	1	5%
Health associated	14	70%
Community acquired	6	30%
Intensive care unit	14	70%
Required surgery	8	40%
Site of infection		
Bacteremia	5	25%
Diarrhea	5	25%
Peritonitis	5	25%
Surgical site infection	3	15%
Mortality	6	30%

Table # 2 Susceptibility profiles of clinical isolates

Antibiotics	Community Associated (n=6)	Health Associated (n=14)
	Resistance	Resistance
Meropenem MIC>8	5 (85%)	11 (77%)
Imipenem MIC>4	5 (85%)	10 (70%)
Ceftriaxone MIC>8	0	3 (23%)
Cefepime MIC>8	0	3 (23%)
Quinolones MIC>0,5	0	1 (7%)

Figure # 1 Patient with *Aeromonas hydrophila* bacteremia. A. Endophthalmitis, B. CT scan demonstrating orbital inflammation

High mortality rate was found especially in immunocompromised patients. Of them all fail empirical treatment with carbapenems.

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## Conclusions

- Emerging phenotypic carbapenem resistance *Aeromonas* infection has been seen, most of them with Healthcare-associated infections.
- Most common carbapenemases tested were negative. This carbapenem resistance could be attributed to an intrinsic Metallo-B-lactamase, CphA encoded by the *cphA* gene and possible hyperproduction of AmpC beta-lactamase.
- The EDTA test for Metallo B lactamases can be less accurate in this settings, due to reduced expression of CphA that generates a false negative result, this depends on the *Aeromonas* strains and species.

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## References

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