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**Novel chromosomal metallo- $\beta$ -lactamase *bla*<sub>CVI-1</sub> isolated from a septic patient infected with *Chromobacterium violaceum* resistant to colistin.**

S.A. Gomez<sup>1,2</sup>, M. B. Sanz<sup>1,2</sup>, M. Rapoport<sup>1</sup>, G. Sucin<sup>3</sup>, T. Corallo<sup>4</sup>, T. Poklepovich<sup>5</sup>, J. Campos<sup>5</sup>, M. Prieto<sup>6</sup>, F. Pasteran<sup>1</sup> and A. Corso<sup>1</sup>.

1. Servicio Antimicrobianos, INEI, ANLIS "Dr. Carlos G. Malbrán"

2. Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICET).

3. Sector de Bacteriología del Hospital Pediátrico "Dr. Avelino Castelán". Resistencia, Chaco.

4. Servicio de Infectología, Hospital Pediátrico "Dr. Avellino L. Castelán". Resistencia, Chaco.

5. Plataforma de Genómica y Bioinformática del INEI, ANLIS "Dr. Carlos G. Malbrán".

6. Servicio Bacteriología Especial, INEI, ANLIS "Dr. Carlos G. Malbrán".

**INTRODUCTION:** *Chromobacterium violaceum* (*Cvi*) is a free living aquatic Gram negative bacillus found in warm regions. *Cvi* is a rare human pathogen able to cause life-threatening infections. About 150 cases of *Cvi* were reported worldwide, 25 of them in Latin America including one case in Argentina (1986).

**Aim:** to describe a colistin (COL) resistant (R) *Cvi* isolate from a septic patient in Argentina expressing a new gene, *bla*<sub>CVI-1</sub>, that resembles CphA, the subclass B2 metallo- $\beta$ -lactamase (MBL) from *Aeromonas* spp.

**METHODS:** In 2019, a 12 y/o child living in the rural area of Chaco province, Argentina (warm climate), was hurt with a spine in a lagoon. The child was hospitalized due to sepsis and multiple abscesses. *Cvi* was isolated from skin and soft tissue and tracheal aspirate. The patient was successfully treated with imipenem (IMI) plus amikacin (AKN). Identification was done by MALDI-ToF, MICs by microdilution ( $\mu$ D) and/or Etest (CLSI). Carbapenemase activity was assayed by Triton Hodge Test (THT), mCIM, Blue Carba test (BCT), Carba NP (CNP), disk synergy test (EDTA-IMI). WGS was done with Illumina MiSeq using Nextera XT. Reads were assembled with Unicycler and annotated with Prokka. PATRIC (<https://www.patricbrc.org/>), BLAST (<https://blast.ncbi.nlm.nih.gov/>) and UniProt (<https://www.uniprot.org/>) were used for analysis.

**RESULTS:** THT and mCIM were positive while EDTA-IMI synergy test, BCT and CNP were negative. IMI MICs were 4  $\mu$ g/ml (R) by  $\mu$ D and 2  $\mu$ g/ml (intermediate) by Etest. COL MIC was >4  $\mu$ g/ml (R). *Cvi* was also R to cefoxitin, cefotaxime but susceptible to ertapenem ( $\leq$ 0.5  $\mu$ g/ml), meropenem ( $\leq$ 1  $\mu$ g/ml), AKN, gentamicin, PTZ, ciprofloxacin, SXT, fosfomicin and tigecycline. *bla*<sub>CVI-1</sub> was detected (840 bp, 279 aa; MN918151). Sequence alignment showed 62.66% ID with CphA from *A. hydrophila* (WP081086394). Conserved residues of B2 enzymes (Glu69, Gly84 and Asn220) and Zn<sup>2+</sup> binding sites (His118, His196 and Asn116, and Asn120 and His263) were present. R to COL can be attributed to *arnA1* and *arnA2* genes. Several multidrug efflux pump genes were detected. Virulence factors required for invasion and toxicity (*spaQ*, *spaT*, *spvC*, *shIA*, *shIB*) were also found. No plasmids were found in this isolate.

**CONCLUSION:** Here, we report the second case of infection by *Cvi* in Argentina. This was colistin R and carried a new gene *bla*<sub>CVI-1</sub>, an MBL that cannot be detected easily by routine methods. Further studies are required to fully characterize the hydrolytic profile of CVI-1. Prompt suspicion of *Cvi* infection considering epidemiological data is crucial to treat such rare disease.