

## P1177 High rate of carbapenemase and 16S rRNA methylase producers among enterobacterial isolates recovered from hospitalized children, Angola

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**Background:** Aminoglycosides (AG) play an important role in antimicrobial therapy in severe infections, usually in combination with  $\beta$ -lactam agents. AG resistance usually arises from enzymatic modification of the drug, however another mechanism corresponding to the production of 16S rRNA methylases (RMT) that are mostly plasmid-encoded is currently emerging. We have recently developed the first culture medium for selecting AG pan-resistant bacteria, mainly RMT producers. Our objective was to perform a prospective screening of RMT producers using this novel screening medium.

**Materials/methods:** Rectal swabs were collected from hospitalized children in a hospital in Angola during a one-week period, January 2017. After an overnight pre-culture in broth, samples were screened for pan-AG Enterobacteriaceae using the selective SuperAminoglycoside medium, supplemented by gentamicin 30  $\mu$ g/ml and amikacin 30  $\mu$ g/ml. PCR experiments were performed using primers specific for RMT genes. Genotyping was performed by PFGE analysis and by MLST.

**Results:** A total of 36 samples were collected from children being 3 months to 13 years-old. A total of 22 pan-AG-resistant Gram-negative isolates were recovered from 20 patients. A total of 16 isolates harboured the *rmtB* gene (9 *Escherichia coli*, 5 *Klebsiella pneumoniae*, 1 *Enterobacter cloacae*, and 1 *Enterobacter aerogenes*), five harboured the *armA* gene (2 *K. pneumoniae*, 1 *E. aerogenes*, 1 *E. cloacae*, and 1 *Citrobacter freundii*), and a single *K. pneumoniae* harboured the *rmtC* gene. All the isolates were resistant to broad-spectrum cephalosporins by production of either CTX-M type enzyme (CTX-M-15 in 15/22 isolates, CTX-M-55 in 2 isolates) or NDM-5 carbapenemase (10 isolates). The *rmtB* gene was carried either by plasmids belonging to IncFIB, IncL/M, IncN and IncY incompatibility groups and respectively carrying *bla*<sub>TEM-1</sub>, *bla*<sub>CTX-M-15</sub>, *bla*<sub>CTX-M-55</sub> and *bla*<sub>NDM-5</sub>. The *armA* gene was carried by an IncA/C plasmid, often associated with the *bla*<sub>NDM-5</sub> carbapenemase gene. MLST showed a high diversity of genetic backgrounds, either for *E. coli* and *K. pneumoniae* isolates.

**Conclusions:** We report here a high rate of RMT producers, colonizing 55% of the hospitalized children. Worryingly, co-association with carbapenemases was often identified, leading to pandrug resistance.