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O0097 Prevalence and genetic features of mcr genes among colistin-resistant Escherichia coli strains recovered from intestinal carriage: results from a French prospective multicentric study.

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Background: The emergence of plasmid-encoded colistin resistance in *Escherichia coli* is of concern. The incidence of intestinal human carriage in Europe remains unknown, mainly because of the lack of adequate screening medium.

Materials/methods: We performed a prospective multicenter study through six hospitals from the Ile-de-France region. In 2016-2017 during three months each adult patient screened at the hospital or intensive-care admission for multidrug-resistant bacteria carriage was additionally screened for colistin-resistant *E. coli* (Col-EC) using the Superpolymyxin® (Elitech Microbiology, France) agar plates. Suspect colistin resistant colonies were confirmed using MALDI-TOF and the Rapid Polymyxin NP® test (Elitech Microbiology, France). MICs were measured by broth microdilution method (BMD); carbapenemase production was tested (Rapid Carba NP test, Biomérieux, France). PCR screening of the *mcr-1/-2/-3* genes and whole genome sequencing of all positive isolates were performed. Antimicrobial susceptibility testing (except for colistin) was performed by the disc diffusion method.

Results: 1,217 patients were screened; 73.5% were hospitalized for less than 48 hours. The screening test was positive for 178 patients (184 strains). The rapid confirmation test was positive for 171 patients (177 strains). According to the BMD results, the specificities of the Superpolymyxin® screening agar and the Rapid Polymyxin NP® test were 88.3% and 96.9%, respectively. The prevalence of Col-EC carriage was 12.7% in the studied population. Seven Col-EC from 4/6 participating centers were positive for *mcr-1* (4.0%). The prevalence of patients carrying the MCR-producing Col-EC was 0.6% (7/1217). Among these patients, 3/7 having been hospitalized abroad during the previous year (Thailand, Cambodia) and 6/7 were hospitalized since less than 48 hours. The Pasteur/Warwick MLST and the phylogenic group of the *mcr-1*- Col-EC were; newST/ST7056/clade I, newST/newST/B1, ST809/ST189/A, ST2/ST10/A, newST/ST48/A, newST/ST219/E and ST21/newST/B1. All the strains were susceptible to expanded-spectrum cephalosporins and none produced carbapenemase whereas 5/7 were resistant to nalidixic acid and cotrimoxazole.

Conclusions: This is the first multicenter study analyzing the prevalence of carriage of colistin-resistant and *mcr*-positive *E. coli* in Europe. Although the prevalence of *mcr*-positive *E. coli* carriage was low, and did not include any B2 virulent strain, the high rate of colistin-resistant but *mcr*-negative *E. coli* is of concern.