P1242 Three years of experience with Xpert Carba R v2 assay for the detection of carbapenemase-producing *Enterobacteriaceae* in a low-prevalence setting

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Background: Early detection of patients colonized with carbapenemase-producing Enterobacteriaceae (CPEs) is detrimental for implementing proper infection control measures. Here, we report on the results of three years of Xpert® Carba-R v2 (Cepheid) use in a hygiene unit in a country with low CPE prevalence.

Materials/methods: Patients repatriated from countries known for high prevalence, contact patients or previously known CPE-carriers were targeted as being "high-risk patients" for CPE carriage. Between September 2015 and October 2018, 1287 "high-risk patients" for CPE carriage were screened using the Xpert® Carba-R v2 and by plating directly or after enrichment culture on ChromID® CARBA Smart medium (bioMérieux). 71% patients were previously hospitalized abroad, 23% were previously carriers and 5% were contact patients.

Results: The Xpert® Carba-R v2 was positive for 92 High risk patients (7% positivity rate). Among the 60 contact patients, 1162 hospitalized abroad patients, 4 tourists returning from India (no link with hosp), and the 61 known carriers screened, the positivity rate was 8% (5), 5.6% (65), 25% (1), 34.4% (21), respectively. Out of the 92 Xpert® Carba-R v2 positive samples 6 yielded cultures positive for NDM-producing *Acinetobacter baumannii* isolates, and 15 yielded negative cultures. For 9/15 only one swab was available and no confirmation was possible, for 2/15, the 2nd swab was negative by PCR and by culture, and for 4/15 were previous OXA-48-carriers. Most surprisingly, 6 negative PCRs were culture positive. These samples contained low amounts of bacteria (5 were only positive after enrichment). These false negative results suggests that culture has to be continued in parallel to PCR. Overall, the Xpert® Carba-R v2 yielded excellent performances: 92% sensitivity, 99% specificity, 84% positive predictive value and 99% negative predictive value.

Conclusions: The Xpert® Carba-R v2 kit is well adapted for rapid screening of high-risk patients even in low prevalence regions given that high risk patients are targeted. It may guide infection control programs to limit the spread of CPEs, but culture remains mandatory to confirm the presence of a CPE, and to determine its the antibiotic susceptibility.