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**Do nursing homes represent a reservoir of Enterobacteriaceae-producing extended-spectrum beta-lactamase (ESBLE) or carbapenemase (CPE) in a regional epidemic context in France? The CARBEHPAD study**

Niki Hayatgheib<sup>1</sup>, Gabriel Birgand<sup>2</sup>, Céline Bourigault<sup>3</sup>, Clément Legeay<sup>4</sup>, Véronique Guilloteau<sup>5</sup>, Stéphanie Perron<sup>6</sup>, Pascale Bemer<sup>7</sup>, Marie-Emmanuelle Juvin<sup>8</sup>, Emmanuel Montassier<sup>9</sup>, Laure De Decker<sup>10</sup>, Eric Batard<sup>9</sup>, Didier Lepelletier<sup>\*11</sup>

<sup>1</sup>*University of Nantes; Mihar Laboratory*

<sup>2</sup>*Arlin Pays de la Loire and Mihar Laboratory*

<sup>3</sup>*Nantes University Hospital; Infection Control*

<sup>4</sup>*Chu Angers; Infection Control and Prevention*

<sup>5</sup>*Chalonnnes Hospital; Infection Control Unit*

<sup>6</sup>*Saumur Hospital; Infection Control Unit*

<sup>7</sup>*University Hospital; Bacteriology*

<sup>8</sup>*Nantes University Hospital; Bacteriology and Hospital Hygiene Department*

<sup>9</sup>*Nantes University Hospital; Emergency Department and Mihar Laboratory*

<sup>10</sup>*Nantes University Hospital; Geriatric Department and Mihar Laboratory*

<sup>11</sup>*Nantes University Hospital; Bacteriology and Hospital Hygiene*

**Background:** Nursing homes (NH) have been described to be a reservoir of residents colonised with ESBLE. In a regional context of outbreak affecting two regional university hospitals since 2013, we suspect to be the same for CPE. This study aimed to evaluate the prevalence of, and factors

associated with, ESBL and CPE digestive carriage in two distinct populations of NH neighbouring two university hospitals.

**Material/methods:** A prevalence survey of ESBL and CPE carriage was conducted from June to August 2016 among incontinent residents in 6 NH. Population A included residents from 2 NH (312 beds) with unknown presence of CPE carriers. Population B gathered residents from 4 units of 4 NH (130 beds) with known CPE carriers presence. Stool samples were collected with swab and cultured on selective chromogenic media (ESBL-chromID® and chromID CARBA-SMART ID®). MASTDISCS ESBL-E and MASTDISC- carbapenemase (CARB / OXA48) were used to confirm the suspected resistance phenotype. Variables collected for the population A were administrative, clinical and treatment data as part of the National PREVEHPAD study.

**Results:** Overall, 289 (93%) and 69 (53%) residents of populations A and B were included in the survey. Among them, 178 (62%) and 56 (81%) were screened, respectively. No CPE was identified. The prevalence of ESBL carriage was 7.9% and 3.6% in populations A and B, respectively. All residents were found to be colonized with one strain. The identification of strains cultured from stools were *E.coli* (n=11), *E. cloacae* (3) and *K. pneumonia* (2). Age, sex, prior history of hospitalization, underlying diseases, GIR score and antibiotic exposure were not significantly associated with ESBL carriage using a logistic regression.

**Conclusions:** This study suggests that NH may not represent a CPE reservoir in a regional context of outbreak. This first prevalence study in this region (3 million inhabitants) found an expected prevalence of ESBL carriage in NH, confirming difficulties to identify ESBL carriers. The lack of predictive factors highlights the need for a high level of compliance with hygiene standard precautions in the absence of systematic screening to control the spread of multidrug resistant bacteria in NH.