

**EV0447**

**ePoster Viewing**

**Resistance mechanisms**

### **A rapid test for detection of OXA-48 carbapenemase**

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#### **Background:**

In recent years, there has been an increase in the number of carbapenemase-producing Enterobacteriaceae, particularly OXA-48-like, often associated with outbreaks which are difficult to control. Isolation strategies are necessary to control these outbreaks, after performing surveillance cultures and thus detecting colonized/infected patients. A reliable and rapid response by the microbiology laboratory is required. Molecular detection techniques are a possible solution, but they are expensive and require qualified staff.

Our objective is to evaluate the OXA-48 Card Letitest® (Leti diagnosis), a new non molecular (immunochromatographic) diagnostic test for the detection of carbapenemases, and compare it with molecular technologies, primarily real-time PCR Xpert® Carba-R (Cepheid).

#### **Material/methods:**

From May to November 2015, in the context of an outbreak in our hospital of *K. pneumoniae* CTX-M 15 and OXA-48-like, 86 strains of *K. pneumoniae* were studied with both Letitest OXA-48 Card" and real-time PCR Xpert® Carba-R (Cepheid), and their results were compared. The results were sent to the National Microbiology Center (CNM) for confirmation by clonality analysis.

#### **Results:**

Of the 86 *K. pneumoniae* strains studied, 55 were isolated from surveillance rectal samples and 31 from clinical specimens, mainly urine samples (21).

Regarding the *Klebsiella pneumoniae* strains, 13 were extended-spectrum  $\beta$ -lactamase (ESBL) positive (CTX-M 15) and 73 were carbapenemase-producing (71 OXA-48 and 2 KPC)

The immunochromatographic (IC) test was negative in the 13 ESBL strains without carbapenemase. IC was positive in 71 of the 73 carbapenemase-producing strains, and was negative in 2 strains. These 2 negative results matched the 2 KPC carbapenemase strains.

The agreement between the results obtained using IC and the molecular technique was 100%, with a Cohen's kappa coefficient of 1 ( $p < 0.001$ ). These results were confirmed by the CNM.

**Conclusions:**

"Letitest OXA-48 Card" is a fast, efficient and economical technique for the detection of carbapenemase OXA-48 from isolates.

"Letitest OXA-48 Card" is a useful tool for the management of hospital outbreaks caused by carbapenemase-producing *K. pneumoniae*.