

# Carbapenemase producing bacteria in travellers constitute a potential threat for current hospital infection control programs

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## Introduction

To prevent introduction and transmission of the increasingly reported carbapenemase producing Enterobacteriaceae (CPE) in hospitals, screening for CPE has been implemented in most infection control programs.

The Dutch surveillance guidelines recommend to include:

- Patients admitted >24hrs in a foreign hospital (<2 months ago)
- Patients from a hospital with a known epidemic situation

The recommended method of detection

- CPE screening agar (such as Brilliance CRE or ChromID Carba)
- ESBL screening agar (such as Brilliance ESBL or ChromID ESBL)

## Aim of the study

To assess the current guidelines, this study aimed to determine the prevalence of CPE in fecal samples of patients travelling abroad

## Materials

- 400 stool samples collected July 2013 – November 2013
  - 200 from patients that have been abroad
  - 200 from patient with no history of travelling

## Methods

- Phenotypical detection
  - Using a swab, stool was directly plated on ChromID Carba and ChromID OXA-48 (Biomérieux)
- Molecular detection
  - Check-Direct CPE (Check-Points) using DNA isolated directly from a stool sample

## Results

- Patients from abroad
  - 75 (37.5%) visited countries with an endemic CPE situation
  - 5/200 patients had been hospitalized
- Phenotypical detection
  - Suspected isolates according to the manual 13
  - Suspected to be a CPE producer as determined by Vitek 6
  - Confirmed as a CPE producer by  $\beta$ -version CT103XL None
- Molecular detection

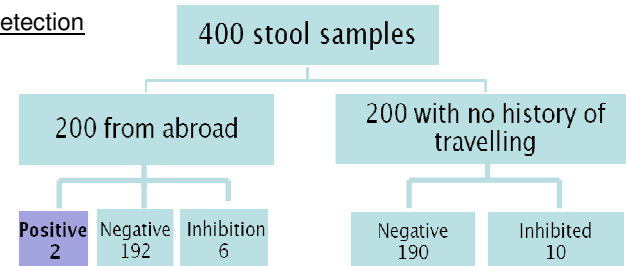


Table: Characteristics of the CPE positive samples determined by molecular detection

Sample	Country	Hospitalized	PCR result <sup>a</sup>	Ct-value	Culture <sup>b</sup>
A	Morocco	No	OXA-48	37.7	Negative
B	Nepal/India	No	NDM/VIM	23.1	Positive

a) Same results when testing was repeated b) Only sample B could be cultured using selective overnight incubation

## Conclusion

- Although the role of for instance the load and transmission rate of CPE is a subject for further studies, this study does show that CPE in travellers constitute a potential threat for current hospital infection control programs
- For further improving these programs, addition of molecular testing and including patients that visited countries with an endemic CPE situation might be considered.

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