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Poster Session VI

Miscellaneous

FIRST REPORT OF FOUR DIFFERENT NOCARDIA SPECIES CAUSING PATHOLOGY IN HUMANS

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Background

Nocardia species are usual members of soil flora and play an active role in the decomposition of organic material. Most are free-living saprophytes; however, some species are opportunistic pathogens that cause nocardiosis in humans and some animals. Although *Nocardia* can invade different organs or even the central nervous system, the most common clinical presentation in our environment is infection of the respiratory tract.

Objective

To describe four *Nocardia* species firstly isolated in clinical specimens that previously had been described only as native soil microbiota.

Material and Methods

All *Nocardia* isolates collected at Donostia University Hospital (San Sebastián, northern Spain) between January 1998 and November 2013 were identified at the species level by sequencing a 1140-bp fragment of the 16SrRNA gene and of the *hsp65* and *secA1* genes. Sequences were compared with sequences of other *Nocardia* isolates available in GenBank (www.ncbi.nlm.nih.gov/genbank) and in leBIBI (www.pbil.univ-lyon1.fr/bibi) databases

Results

Overall, among the 292 *Nocardia* isolates collected, 24 different species were identified. Twenty of them (83.3%) had been previously described as opportunistic pathogens in humans. However, four species *Nocardia alboflava*, *Nocardia cerradoensis*, *Nocardia gamkensis* and *Nocardia jiangxiensis* had been formerly collected only from soil microbiota of different geographic locations (China, Brazil, and South Africa).

There were 9 isolates of these four *Nocardia* species from 6 different patients; three men and three women. All samples were from respiratory origin.

Nocardia cerradoensis was isolated in 3 different patients causing two episodes of COPD exacerbation and one episode of bronchiectasis infection.

One patient had four episodes of *Nocardia alboflava* maintained during 11 months, causing within this time two episodes of pneumonia and two episodes of COPD exacerbation.

The other two patients had one episode of *Nocardia gamkensis* and *Nocardia jiangxiensis* respectively, as a cause of COPD exacerbation and bronchiectasis infection, respectively.

Conclusions

The development of molecular techniques for *Nocardia* identification is increasing the number of species causing clinical disease. At our knowledge, this is the first evidence in the literature of the isolation of *N. alboflava*, *N. cerradoensis*, *N. gamkensis*, and *N. jiangxiensis* as opportunistic human pathogens.