Carbapenem-resistant *Acinetobacter baumannii* carrying the NDM-1 gene, Czech Republic, 2011

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Citation style for this article:

Nemec A, Krizova L. Carbapenem-resistant *Acinetobacter baumannii* carrying the NDM-1 gene, Czech Republic, 2011. Euro Surveill. 2012;17(11):pii=20121. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20121>

Article published on 15 March 2012

To the editor: We read with interest the paper of Hrabák et al. [1] on the isolation of a *bla*_{NDM-1}-carrying *Acinetobacter baumannii* strain. However, although the authors believed to be the first in the Czech Republic to report on a New Delhi metallo-beta-lactamase-1 (NDM-1)-producing bacterium, there have been other reports on the same *A. baumannii* strain in the country [2,3]. Here, we would like to comment on some points of these studies.

In our report published in a Czech national bulletin in September 2011 [2], we presented epidemiological and microbiological data on a high-level carbapenem-resistant strain (designated ANC 4097) isolated from a patient hospitalised in an intensive care unit in the Czech Republic. Based on the available information, we concluded that the strain had been imported to the Czech Republic from Egypt in mid-2011 [2]. The strain was shown to be resistant in vitro to all beta-lactams and to most other clinically relevant antimicrobial agents, and to carry the genes encoding the NDM-1 and OXA-23 carbapenemases together with a number of other resistance determinants [2]. In a later paper, we provided additional genetic characterisation of ANC 4097 focused on the genetic structures associated with the *bla*_{NDM-1} and *bla*_{OXA-23} genes [3]. We have only recently learned that the laboratory where the original clinical specimens were processed had provided the same bacterial strain to two research groups. Thus, two independent investigations on the same strain were conducted leading to our papers [2,3] and that of Hrabák et al. [1].

Even though the data on the NDM-1 carrying strain presented in the independent studies are mostly congruent, some findings and conclusions by Hrabák et al. [1] deserve a commentary. Firstly, Hrabák et al. claimed that the strain was a producer of the NDM-1 carbapenemase based on the presence of the *bla*_{NDM-1} gene, carbapenemase activity, and the inhibitory effect of ethylenediaminetetraacetic acid (EDTA) on the carbapenem resistance phenotype. However, ANC 4097 was also shown by us to harbour the *bla*_{OXA-23} and

*bla*_{OXA51}-like genes, both carrying IS*Aba1* in their promoter regions [2,3]. Therefore, the strain may produce at least three different carbapenemases, each of which can be responsible for the carbapenem resistance. As EDTA inhibition of carbapenemase activity is not a specific marker to detect the metallo-beta-lactamase production in *A. baumannii* [4,5], unambiguous evidence that ANC 4097 is a genuine producer of NDM-1 (and not only a carrier of a silent *bla*_{NDM-1} gene) is still missing.

Secondly, the minimum inhibitory concentration (MIC) for chloramphenicol (8 mg/L) reported by Hrabák et al. was surprisingly low seeing as *A. baumannii* is typically resistant to this antibiotic. In contrast, we found a chloramphenicol MIC of ≥ 256 µg/mL in ANC 4097 using Etest (bioMérieux), and the strain yielded a positive PCR signal for the *catA1* gene encoding chloramphenicol acetyltransferase (unpublished data). It is of note that the *catA1* gene is part of the AbaR3 resistance island which, or variants of which, are commonly present in *A. baumannii* European clone I to which ANC 4097 belongs [3].

Finally, although Hrabák et al. [1] have reported their isolates to be susceptible only to colistin, we found that ANC 4097 was also susceptible to at least tobramycin and doxycycline [2,3]. Even though these antimicrobials may have limited value in the treatment of systemic *Acinetobacter* infections they have been recommended for consideration when defining the level of multidrug resistance in *A. baumannii* for epidemiological purposes [6].

Despite these points, the epidemiological part of the report of Hrabák et al. [1] has valuably contributed to the comprehensiveness of the information on the first bacterial strain with the *bla*_{NDM-1} gene isolated in the Czech Republic.

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