

P0999 **Clonal spread of *Klebsiella pneumoniae* NDM-1 strain among oncohaematological patients**

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**Background:** *Klebsiella pneumoniae* is an important etiological agent of healthcare-associated and community-acquired infections. In recent years *K. pneumoniae* strains producing NDM-1 carbapenemase (New Delhi metallo- $\beta$ -lactamase) became an important epidemiological and therapeutic problem in Poland. Treatment options are limited as these strains are multidrug-resistant. Molecular typing methods evaluate genetic relatedness of the bacterial isolates and help to confirm an outbreak in a given healthcare institution. This is necessary for implementation of proper infection control procedures. The aim of the study was to evaluate genetic relatedness of *K. pneumoniae* NDM-1 isolates cultured from clinical samples obtained from oncohaematological patients.

**Materials/methods:** Analysis comprised 60 isolates of *K. pneumoniae* NDM-1 cultured from 60 patients hospitalised in the haematology ward of an university-affiliated tertiary care hospital in Warsaw in the period September 2013 – December 2014. Molecular typing of these isolates of *K. pneumoniae* NDM-1 was performed using the RAPD (random amplified polymorphic DNA) method.

**Results:** Among 60 tested isolates of *K. pneumoniae* NDM-1 three genetic patterns have been identified – Type 1, Type 2 and Type 3. Type 1 was detected in 57 (95%) isolates. The remaining types were represented by single isolates: Type 2 – in one isolate and Type 3 – in two isolates. In the analysed period there were three epidemic outbreaks caused by Type 1 *K. pneumoniae* NDM-1. Outbreak I took place from October 2013 to March 2014 r. and involved 33 patients. Outbreak II lasted 3 months (May – July 2014) and comprised 10 patients, while outbreak III was recorded in September – November 2014 comprising 10 patients. Between these three epidemic outbreaks strains of *K. pneumoniae* NDM-1 were isolated only sporadically.

**Conclusions:** In the analysed period, clinical specimens of 57 oncohaematological patients yielded isolates of *K. pneumoniae* NDM-1 which were identical on molecular typing using RAPD method. It confirms the clonal spread of this strain among immunocompromised patients.