

P0626 **Comparison of capsular K1/K2 serotypes, virulence gene profiles, antimicrobial susceptibilities of hypervirulent *Klebsiella pneumoniae* with non-hypervirulent *K. pneumoniae* from respiratory specimen**

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**Background:** The report of hypervirulent *Klebsiella pneumoniae* (hvKP) infections have been increased worldwide, although the definition of hvKP was not clearly defined. Its prevalence of capsular serotype, virulence genes, and antibiotic susceptibility test result were studied mainly in invasive liver disease or from blood isolates, and known as the hypermucoviscosity phenotype, especially K1/K2 capsular serotype, were predominant in hvKP. But their virulence profiles and characteristics in isolates from the respiratory specimen were not studied well. Therefore, we studied the prevalence of seven virulence genes, capsular serotypes of K1/K2, and microbiological characteristics of *K. pneumoniae* from the respiratory specimens.

**Materials/methods:** We studied the 307 consecutive *K. pneumoniae* isolates from respiratory specimens, including 61 bronchoalveolar lavage, 213 sputum, and 33 tracheal aspirate, in 2014 at Chonbuk National University Hospital. All the isolates were identified and tested for antibiotic susceptibility test using Vitek2 system (bioMerieux Inc., Hazelwood, USA). And string test for the hypermucoviscous property, the genetic determination of seven virulence factors (*rmpA*, *entB*, *ybtS*, *kfu*, *iutA*, *mrkD*, *allS*) and K1/K2 capsular serotypes using multiplex PCR were performed.

**Results:** The *iutA*-positive isolates were considered as hvKP, and hvKP was total 153 isolates (49.8%). K1 capsular serotype was 67 isolates (21.8%), and K2 capsular serotypes was 52 isolates (19.9%). In hvKP, K1 and K2 serotype was 42.5% (65/153) and 21.6% (33/153), respectively. A total 140 (45.6%) isolates showed positive on string test. In hvKP group, all six virulence genes were significantly higher than non-hvKP group (mean virulence gene 5.5 in hvKP vs. 2.9 in non-hvKP,  $p < 0.000$ ). And antimicrobial resistance rates of non-hvKP was higher than those of hvKP, significantly.

**Conclusions:** hvKP incidence was high in the respiratory specimen, and they tend to carry more virulence genes than non-hvKP. But further studies for another hvKP capsular serotype need to be studied for non-K1/K2 capsular serotype hvKP was about 1/3. And the antimicrobial resistance rates in hvKP were lower than non-hvKP, it should be carefully monitored, for hypermucoviscous phenotypes were dominant and the resistance of *K. pneumoniae* were emerged.