

Short Communication

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Volume 2 : Issue 4

Article Ref. #: 1000PRRMOJ2121

Article History

Received: October 29th, 2015

Accepted: November 9th, 2015

Published: November 9th, 2015

Citation

Saraya T, Kimura H, Takizawa H. Is *Mycoplasma pneumoniae* infection associated with adult asthma exacerbation? *Pulm Res Respir Med Open J*. 2015; 2(4): 126-127. doi: [10.17140/PRRMOJ-2-121](https://doi.org/10.17140/PRRMOJ-2-121)

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Is *Mycoplasma Pneumoniae* Infection Associated with Adult Asthma Exacerbation?

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Mycoplasma pneumoniae infection has been considered as a cause of initial onset of bronchial asthma¹ or exacerbation of asthma.² For example, Kraft, et al. showed that *M. pneumoniae* was detected by Polymerase Chain Reaction (PCR) in 10 of 18 asthmatics and one of 11 control subjects ($p < 0.02$).³ Furthermore, Martin, et al. reported that thirty-one of 55 asthmatic adult patients were PCR-positive for *Mycoplasma* ($n=25$) or *Chlamydia* spp. ($n=6$) compared with 1 of 11 (9%) control patients.⁴ In both of those studies, *M. pneumoniae* was confirmed primarily in lung biopsy specimens or in lavage fluid.^{3,4}

We performed comprehensive analysis for multiple pathogens, including *M. pneumoniae*, *Chlamydomphila pneumoniae*, and common respiratory viruses (i.e., Respiratory Syncytial Virus (RSV), Human rhinovirus (HRV), Human metapneumovirus (HMPV), influenza virus, human parainfluenza virus, human bocavirus) using PCR or real-time PCR techniques. However, our preliminary data, obtained for both outpatient ($n=29$) and inpatient ($n=15$) subjects suffering from asthma attacks, did not detect *M. pneumoniae* or *C. pneumoniae* in the nasopharyngeal or oropharyngeal swabs from these individuals.

In contrast, real-time PCR detected virus in 6.9% ($n=2$) and 46.7% ($n=7$) of subjects with asthma exacerbations in outpatient and inpatient settings, respectively.⁵ The incidence of virus-positive viral status was significantly higher in the latter group ($p < 0.002$).⁵ This observation was similar to the results obtained in a previous study that, using PCR-based viral diagnostics, detected viral respiratory infections in up to 50% of adults with asthma exacerbations.⁶

Notably, in a total of 15 hospitalized patients, 7 virus-positive cases ($n=5$, HRV; $n=1$, HMPV; $n=1$, RSV) had significantly lower values of SpO_2 ($81.4 \pm 3.9\%$) than those measured in the virus-negative group ($n=8$, SpO_2 : $91.8 \pm 1.3\%$, $p < 0.007$), and the frequency of hypercapnea ($PaCO_2 > 45$ Torr) was significantly higher in the virus-positive group (66.7%, $n=4$) than in the virus-negative group (0%; $p = 0.014$).⁵

Thus, in the context of social and economic costs, our preliminary data suggest that viral infection in asthmatic patients may be more important for case management than is *M. pneumoniae* infection in these patients. Larger studies will be needed to further address the role of *M. pneumoniae* in the exacerbation of asthma.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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