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Research Article

**ASSOCIATION BETWEEN SEVERITY OF ASTHMA &
MYCOPLASMA PNEUMONIA INFECTION AND ITS
CONTROL**¹Dr Muhammad Saad Ali, ¹Dr Nageen Javaid, ²Dr Muhammad Usman¹DHQ Hospital Gujranwala, ²Allied Hospital Faisalabad.**Article Received:** February 2019**Accepted:** March 2019**Published:** April 2019**Abstract:**

Objectives: This research work aimed to assess the association among MPI (Mycoplasma Pneumonia Infection) and the extremity of disease of asthma and the control of asthma, to support the doctors in the department of respiratory diseases for the betterment of the therapy methods.

Methodology: The recruitment of the one hundred and forty-nine patients suffering from asthma in an acute phase or convalescent phase from March 2016 to June 2018 who were getting treatment from the department of respiratory diseases in DHQ Hospital Gujranwala. The tests for the function of pulmonary, examination of the sputum induction, calculation of IgM, IgG & IgE in the blood serum and the assessment of the control of asthma conducted for the all the inducted patients of this study.

Results: Seventy eight patients of asthma were in the acute phase of asthma, MPI was available in 48.71% (n: 38) patients and seventy one patients were available in stable state, MPI was present in 30.98% (n: 28). There was a clear disparity in the frequency of MPI among the patients of these 2 groups. FEV1% Pred & scores of ACT were very low in the patients of MPI as compared to the patients with no MPI whereas the count of eosinophil & IgE in the serum were very high in the patients of MPI.

Conclusions: MPI is able to play a vital part in the prevalence of acute asthma which is the reason of reduced function of pulmonary, complication in the control of asthma & more serious inflammation of the airway.

Keywords: Sever, Complication, Serum, Pulmonary, Disparity, Stable, Sputum, Acute.

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INTRODUCTION:

Asthma is inflammation of airways by pathogenesis which may be the outcome of the different factors of genetics or environment [1]. The complication is a serious problem of health and responsible for a high frequency of morbidity & mortality. It is a serious matter of concern among the specialist of the department of respiratory diseases [2]. The infections of the respiratory system are the main reason of exacerbation of asthma [3]. There is a well establish role of the MPIs in the development of the asthma. Specialists have the opinion that MPIs are the vital part in the pathogenesis of the disease of asthma [4]. Regarding the correct effect of MPIs on asthma, some specialists concluded that MPIs are the main reasons of start of the asthma, aggravate the symptoms of asthma and it is the cause of the complications in the management of asthma [5, 6].

Some specialists concluded that there is no difference in the control status of asthma and parameters of the tests of the function of the lungs in the patients of asthma with & without MPIs and they declared that there is no relation of MPIs with the control of asthma, severity of asthma and exact location of the obstruction in the airway [7]. Therefore, there is no clear work to show the correct association among the MPIs and asthma severity as well as the control of asthma. So, we conducted this research work to assess the association among MPIs and severity of asthma manifestations as well as the control of asthma and to support the specialist in his field to apply better methods of treatment.

METHODOLOGY:

This research work was conducted at the department of respiratory diseases in DHQ Hospital Gujranwala. The duration of this research work was from March 2016 to June 2018. In this research work, one hundred and forty nine patients suffering from asthma were the part of this research work. Seventy eight patients were suffering from the acute phase of asthma and seventy one patients were in the convalescent phase of the asthma. There was no important disparity in the clinical information as age of patient, sex & previous medical history between

the patients of two groups. The patients with confirmed diagnosis of asthma as well as in need of therapy with systematic corticosteroid were the part of this research work [8]. The ethical committee of the hospital gave the permission to conduct this study. This research work carried out according to the declaration of Helsinki. All the participants of the research work gave their willing to participate.

Two milliliter blood sample checked for diagnosis of particular IgM & IgG. Kit manual was providing the tests of the results [9]. Cardiopulmonary instruments were in use for the calculation of FVC, FEV1, and PEF & FEV1% pred [10]. Astham control test was in use for the measurement of the asthma control [11]. Methods of the past were in use for the examination of sputum induction [12, 13]. Then the period of inhalation was just five minutes and stopped after expectoration of a sufficient quantity of sputum [14]. Immuno cap system was in use for the measurement of the IgE content in serum [15]. SPSS software V.17 was in use for the statistical analysis of the collected information. T test was in action for the comparison of the data of two groups. Chi square test was in use to compare the enumeration information among both groups. Pearson method of correlation analysis was in use for to find the correlation among MPI, scores of ACT, FEV1% pred & Ige content. P value of <.050 was the significant value.

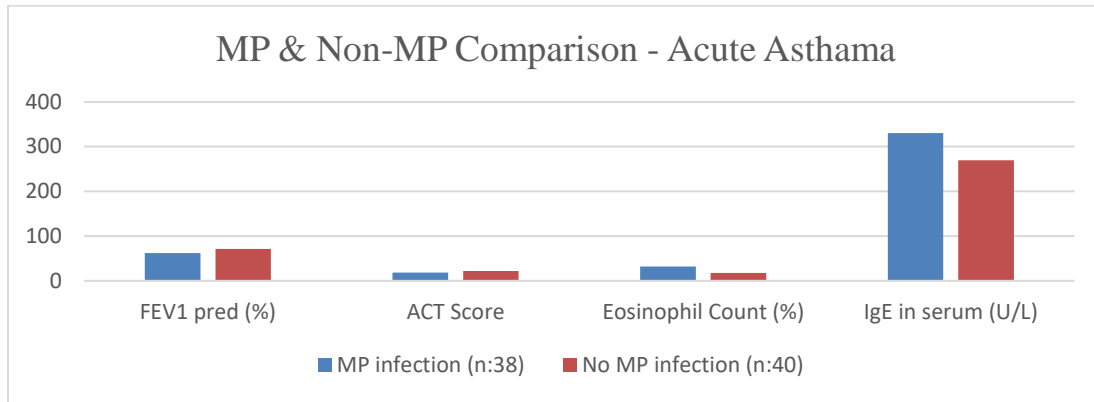
RESULTS:

We found that seventy eight patients were in the acute phase of asthma and presence of MPI among them was 48.71% (n: 38), and seventy one patients were the victims of stable state, we confirmed the presence of MPI in 30.98% (n: 22). We found an important disparity in the frequency of the MPI among the patients of both groups. Comparison of function of the pulmonary, IgE content available in serum & count of eosinophil in the examination of sputum induction carried out in the patients of both groups as available in Table-1. FEV1% pred & scores of ACT were very low in the patients of MPI in comparison with the patients with no MPI whereas the count of eosinophil & serum IgE were very high in the patients of MPI as mentioned in Table-1.

Table I: Comparison of MP and Non MP Cases in Acute Asthma

Parameters	MP infection	No MP infection (n:40)	P value
FEV1 pred (%)	62.10±9.70	71.50±10.10	<0.050
ACT Score	18.50±2.10	21.70±2.40	<0.050
Eosinophil Count (%)	32.20±18.60	17.40±12.80	<0.050
IgE in serum (U/L)	330.10±29.70	269.40±36.50	<0.050

MP = Mycoplasma Pneumonia.



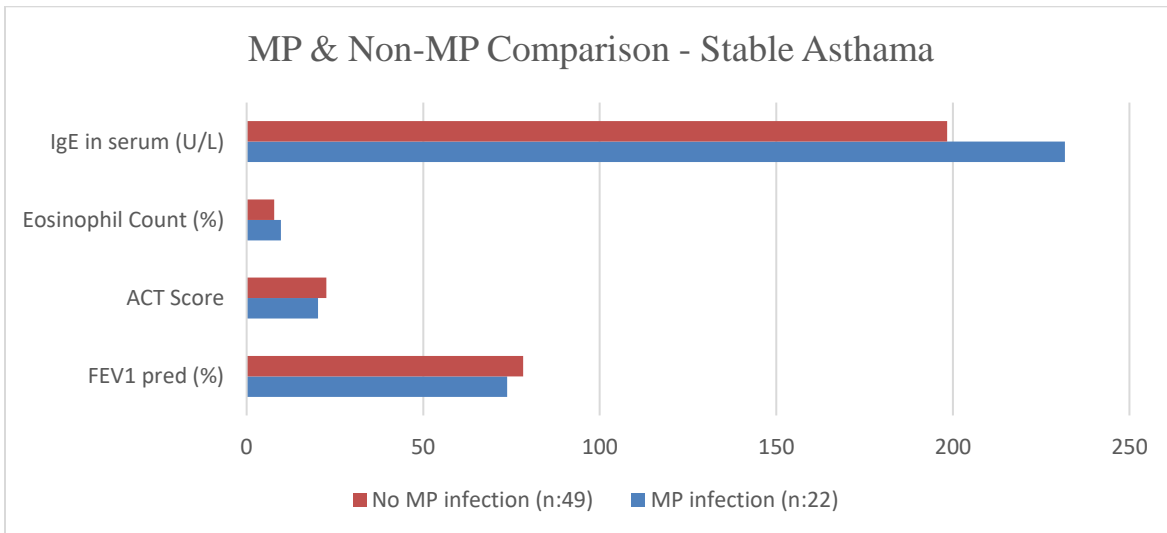
In the patients having asthma in stable condition, the comparison of the associated parameters was available in Table-2. The patients of MPIs have low scores of ACT but greater in the concentration of IgE and count of eosinophil, when compared with the patients of other group as available in Table-2. We

found in current research work that there is a positive correlation of scores of ACT to FEV1% pred, and there is negative correlation of scores of ACT with the rate of count of eosinophil count but we found no significant association among other factors. (P>0.05).

Table II: Comparison of MP and Non MP Cases in Stable Asthama Group

Parameters	MP infection (n:22)	No MP infection (n:49)	P value
FEV1 pred (%)	73.80±9.80	78.20±11.30	<0.050
ACT Score	20.20±1.90	22.60±2.30	<0.050
Eosinophil Count (%)	9.70±3.60	7.80±3.20	<0.050
IgE in serum (U/L)	231.70±23.90	198.40±24.50	<0.050

MP = mycoplasma pneumonia.



DISCUSSION:

There are many infections of the respiration which are the cause of the incidence of asthma; MRI has a positive relation with the occurrence of asthma according to many authors [4, 7]. In this study, we

concluded that the rate of MPIs was 48.710% in the group of acute asthma & 30.980% in the group of convalescent asthma, showing that the rate of MPIs is very high in the patients suffering from asthma which confirmed the findings of past studies [4, 7]. In the

same manner, the rate of infection in the group of convalescent group is very low as compared to the group of acute asthma, showing that MPIs can play important role in the incidence of acute asthma which is also similar with the research work of Zhou [16]. In a research work on 62 patients, Khalil concluded that scores of ACT & parameters of the tests of the lung function were not different among the patients of asthma with or without MPIs [7].

In asthma, the scoring of ACT carried out to evaluate the asthma control & count of the eosinophil in the examination of sputum induction conducted to evaluate the level of inflammation of airway. The current outcome of the study show that the reduced function of pulmonary, complication in the control of asthma and very serious inflammation of the airway is the result of MPIs.

Regarding the disparity among this research work & the work of Khalil, it may be the attribution to the area, region, test accuracy & many other features when needs other research works to clear the issue. We found in this research work that, score of ACT have a relation with the FEV1% pred & it has negative association with the percentage of the count of eosinophil in the examination of the sputum induction which showed that even among the patients of convalescent phase of asthma, the result is inflammation because of eosinophil present & lower level of control for asthma have an association with the high level of inflammation. Additionally, we found in the current research work that MPIs has a positive correlation with the FEV1% pred, scores of ACT, count of eosinophil in the examination of sputum induction & level of IgE but were not able to find a significant disparity during analysis of the data.

CONCLUSION:

The results of this study shows that MPIs are the cause of many complications of asthma as well as it has a relation with the severity & control of the disease of asthma.

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