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Prevalence and Clinical Spectrum of *Mycoplasma pneumoniae* in Community-acquired Pneumonia

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Community-acquired pneumonia has been a serious health issue, particularly among the pediatric age group, and is considered to be one of the major causes responsible for hospital admissions [1]. It is a substantial cause of respiratory illness and mortality in children in developing countries. It is a widespread bacterial pathogen that has been associated with a variety of clinical features, including pulmonary and extrapulmonary manifestations. But as diagnostic testing is typically based on serology or non-standardized molecular techniques, the prevalence and epidemiology of hospitalized community-acquired pneumonia (CAP) owing to Mycoplasma pneumoniae are poorly recognized [6]. Because of its ample prevalence and fatal complications, there is a need to identify cases of Mycoplasma pneumonia and treat them optimally to minimize the long-term consequences. This study aims to recruit the cases of community-acquired pneumonia from the OPD and IPD of Jawahar Lal Nehru Medical College Hospital, AMU, Aligarh, for one year (October 2019–October 2020) in patients within 1–14 years of age and assess the prevalence of Mycoplasma pneumonia among them. Five (15.62%) of the total of thirty-two (100%) patients with community-acquired pneumonia had Mycoplasma pneumoniae infection diagnosed based on serology, with the majority of patients in the 1–5 year age group and variable clinical characteristics, with tachypnea, fever, and cough being the most prominent symptoms and diffuse reticular pattern and lobar consolidation being the most common radiological findings. It has been concluded from the above study that the prevalence of Mycoplasma pneumoniae in community-acquired pneumonia cases based on serology is low. However, because serology is not 100% sensitive and specific, and titers can range from complete absence for the first 7 days to highly detectable after one week of illness, the diagnosis should not be ruled out solely based on serology. Owing to the severity of the disease, a differential diagnosis of *M. pneumoniae* must always be kept in mind.

Keywords: Community Acquired Pneumonia; Clinical Features; *Mycoplasma Pneumoniae*; Prevalence.

Community-acquired pneumonia has been a serious health issue, particularly among the pediatric age group, and is considered to be one of the major causes responsible for hospital admissions[1]. It has been a significant cause of respiratory illness and has resulted in numerous pediatric deaths in developing countries. Prematurity, undernutrition, poor socioeconomic conditions, and exposure to tobacco smoke are the components that raise the rates and severity of

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pneumonia in pediatric populations[2]. Streptococcus pneumoniae, Staphylococcus aureus, Mycoplasma pneumoniae, and Hemophilus influenzae are among the most common organisms responsible for CAP[1]. Among them, *M. pneumoniae* has been considered one of the deadliest ones responsible for hospital admissions. *M. pneumoniae* is a widespread bacterial pathogen that has been associated with various clinical manifestations, including pneumonia, encephalitis, and extra-CNS manifestations like Stevens-Johnson syndrome[3, 4]. Mycoplasma pneumoniae (MP) is frequently linked to epidemics in communities and healthcare settings, notably in school-age children and adolescents[5]. But as diagnostic testing is typically based on serology or non-standardized molecular techniques, the prevalence and epidemiology of hospitalized community-acquired pneumonia (CAP) owing to Mycoplasma pneumoniae are poorly recognized[6]. Clinically, children with Mycoplasma pneumoniae CAP exhibited generalized features of fever, cough, diarrhea, and other vague symptoms[7] that were insufficiently distinguishable to discriminate CAP caused by Mycoplasma pneumoniae from other etiologies. On multivariate analysis, the signs and symptoms linked to Mycoplasma pneumoniae CAP are comparable to those seen with other microorganisms, such as virus infections such as influenza. Additionally, clinical characteristics that are independently linked to MP detection, including rales, have historically been linked to common bacterial illnesses[8]. According to several epidemiological studies, M. pneumoniae infection rates range from 1.3% to 50%, and during epidemics, infection rates may exceed 50%[9]. In children under the age of five who have pneumonia, case-control statistics show that >1 microorganism was found in 93.0% of cases and 74.1% of controls[10]. Therefore, identifying the etiological profile of M. pneumoniae pneumonia and the connection to clinical characteristics may help to improve the management and treatment. Mycoplasma pneumonia is generally a benign illness, although it can have several pulmonary and extrapulmonary complications, particularly in young children and the elderly, such as ARDS, lung abscess, necrotizing pneumonitis, respiratory failure, myocarditis, aseptic meningitis, hemolysis, septic arthritis, hepatitis, pancreatitis, conjunctivitis, glomerulonephritis, and so on[11]. The link between asthma and recurrent episodes of wheezing has been demonstrated in numerous studies. The initial study that specifically correlated viral illness and mycoplasmal infection to repeated bouts of wheezing in asthmatic children was published in 1970 by Berkovich et al.[12]. Of the 84 patients, 27 (32%) had corroboration of infection with either *M. pneumoniae* or a respiratory virus proven by serology. In a study by Lieberman et al., a large number of patients (18%) were discovered to suffer from *M. pneumoniae* pneumonia and were hospitalized for an acute exacerbation of bronchial asthma[13]. In another trial by Biscardi et al., *an actual M. pneumoniae* infection was located in 20%[14] (24/119) of the subjects already diagnosed with asthma during their recent exacerbation. Acute *MP* infection was identified in 26 (50%) of the 51 cases who were having their first episode of asthma[14]. It has been hypothesized that *M. pneumoniae*-related community-acquired pneumonia in infancy is linked to a higher frequency of asthma. In 1994, Yano et al[15] documented a patient whose earlier acute mycoplasmal respiratory infection led to the beginning of bronchial asthma. *M. pneumoniae* may yet be isolated from respiratory secretions even after receiving excellent antibiotic therapy. When compared to controls, pulmonary structural abnormalities indicative of minor airway obstruction was seen much more frequently in the first 1-2 years following M. pneumoniae infection[16]. Continued Mycoplasma pneumoniae affection causes lower expiratory flow rates and increased airway hyperresponsiveness in those without asthma[17]. Because of the ample prevalence and fatal complications of community acquired pneumonia, there is a need to identify cases of Mycoplasma pneuemonia and treat them optimally to minimize the long-term consequences.

MATERIAL AND METHOD

This was a retrospective cohort study conducted from October 2019 to October 2021 at the Pediatric Outpatient and In-Patient Department and Pediatric Infectious Diseases Clinic, Jawaharlal Nehru Medical College and Hospital, Aligarh Muslim University, Aligarh, Uttar Pradesh, India, on the prevalence of mycoplasma-related community-acquired pneumonia in 38 patients enrolled for the trial based on inclusion and

exclusion criteria. 2 patients out of 38 expired during the hospital stay, and 4 patients were lost to follow-up. Therefore, a total of 32 patients were evaluated for analysis. The details of the study have been described as follows:

Inclusion Criteria

Any case of Community-Acquired Pneumonia aged 1 to 14 years.

Exclusion Criteria

Patients with co-morbidities such as heart disease (Congenital or Acquired), Diabetes, and known respiratory illnesses like Chronic Lung disease, Asthma, Cystic Fibrosis, Tuberculosis, Developmental Delay, Obesity, and Syndromic children like Downs Syndrome.

Consent for the study

Informed parental consent was signed by the parents of the patients willing to participate in the trial.

Methodology

The study included all community-acquired pneumonia (CAP) cases that were presented to the inpatient and outpatient clinics of the Department of Pediatrics between October 2019 and October 2020, fulfilling the inclusion criteria. The diagnosis of community-acquired pneumonia was made as per the WHO criteria.

On the first day of the visit or admission, 2 ml of venous blood was drawn into a red-top vial while following all aseptic procedures, and it was quickly transported to the J.N. Medical College Immunology Lab in the Department of Microbiology. Following centrifugation of the samples, the serum was extracted with a pipette and kept at -20°C in a deep freezer for up to six months.

All the patients received treatment following standard guidelines.

Statistical Methods

SPSS software was used to capture and analyze all data. The chi-square test was employed to assess categorical data that was presented as numbers and percentages. The mean and standard deviation were used to express continuous variables with a normal distribution. The differences were calculated using the t-test. A statistically significant difference was defined as a difference of P 0.05.

OBSERVATION AND RESULT

Demographic parameter are depicted in table 1. Table 2 depicts that out of a total of 32 patients (n=32), 22 patients (68.75%) had fever and cough, 17 (53.13%) patients had wheeze, 8 (25%) patients had rhinorrhoea and cyanosis, 19 (59.38%) patients had chest retractions, 32 (100%) patients had tachypnoea. The mean and SD of the temperature and SpO2 were 99.89 ± 0.92 and 92.94 ± 5.01 respectively.

It is clear from table 3 that out of a total of 32 patients, 10 patients (31.25%) had diffused reticular pattern, 19 (20.65%) patients had lobar consolidation, 3 (9.38%) patients had para-hilar infiltration and 0 patients had hyperinflated lung fields.

It is clear from table 4 that the mean and SD of age in the *M. pneumoniae* Ig M +ve and Ig M – ve group is 2.84 ± 2.13 and 4.00 ± 3.94 respectively with P = 0.529. Out of the total of 32 patients, 5 patients (15.625%) were *M. pneumoniae* Ig M +ve and 27 patients (84.375%) were *M. pneumoniae* Ig M –ve. Out of the total of 5 Ig M +ve patients, 4 patients (80%) were in the age group 1-5 yrs and 1 patient (20%) was between 5-10 yrs of age whereas no patient was in the age group 10-14 yrs. Furthermore, out of a total of 27 Ig M –ve patients, 20 patients (74.07%) were in the age group 1-5 yrs, 4 patients (14.81%) were in the age group 5-10 yrs and 3 patients (11.11%) were between 10-14 yrs of age. Based on sex, 2 patients (40%) were *M. pneumoniae* Ig M +ve among males whereas 15 male patients (55.56%) were *M. pneumoniae* Ig M –ve. Out of a total of 17 female patients, 3 (60%) were *M. pneumoniae* Ig M +ve and 12 (44.44%) were *M. pneumoniae* Ig M –ve with P = 0.522. The mean and SD of weight among the *M. pneumoniae* Ig M + ve group is 12.06 ± 5.35 whereas it was 14.15 ± 7.84 In the Ig M –ve group with P = 0.574. The mean and SD of the height of the patients among Ig M + ve and –ve groups were 84.80 ± 17.82 and 91.59 ± 23.93 respectively with P = 0.552. The mean and SD of BMI among *M. pneumoniae* Ig M + ve and – ve were 16.07 ± 1.97 and 15.86 ± 2.18 respectively with P = 0.843. Out of the total

patients with family H/o wheeze, 3 patients (60%) were *M. pneumoniae* Ig M + ve and 8 (29.62%) patients were *M. pneumoniae* Ig M –ve with P = 0.189. Among the total hospitalized patients, 2 (40%) patients were *M. pneumoniae* Ig M + ve and 18 (66%) were *M. pneumoniae* Ig M –ve with P = 0.257.

It is clear from Table 5 that out of the total of 5 (100%) *M. pneumoniae* Ig M +ve patients, 5 (100%) patients had fever, cough, and tachypnea; 4 (80%) patients had wheeze; 3 patients (60%) had rhinorrhoea; 2 (40%) had chest retractions; no patient had cyanosis. The mean and standard deviation of temperature was 100.18 0.64, and the mean and standard deviation of Spo2 was 95.40 2.07. There were 17 (62.96%) patients with fever, cough, and chest retractions; 13 (48.15%) with wheezing; 5 (18.52%) with rhinorrhoea; 27 (100%) with tachypnea; and 8 (29.63%) with cyanosis. The mean and SD of temperature and Spo2 in the *M. pneumoniae* -Ig M-ve group were 99.83 0.96 and 92.48 5.28, respectively. The corresponding P values of fever, cough, wheeze, rhinorrhoea,

Table 1. Demographic parameters of patients with CAP

Demographic parameters	CAP(n=32)
Age	
Mean Age (±SD), years	3.82 ± 3.71
1-5 years, n (%)	24 (75%)
5-10 years, n (%)	5 (15.63%)
10-14 years, n (%)	3 (9.38%)
Sex	
Male, n (%)	17 (53.13%)
Female, n (%)	15 (46.88%)
Mean weight (±SD), kg	13.83 ± 7.47
Mean height (±SD), cm	90.53 ± 22.97
Mean BMI (±SD), kg/m^2	15.89 ± 2.12
Family H/o wheeze, n(%)	8 (25%)
Hospitalization, n(%)	20 (62%)

Table 2. Clinical signs and symptoms among CAP

Signs and Symptoms	CAP(n=32)
Fever, n (%)	22 (68.75%)
Cough, n (%)	22(68.75%)
Wheeze, n (%)	17 (53.13%)
Rhinorrhoea, n (%)	8 (25%)
Chest Retractions, n (%)	19 (59.38%)
Tachypnoea, n (%)	32 (100%)
Cyanosis, n (%)	8 (25%)
Mean Temperature (± SD), F	99.89 ± 0.92
Mean SpO2% (+/-SD)	92.94 ± 5.01

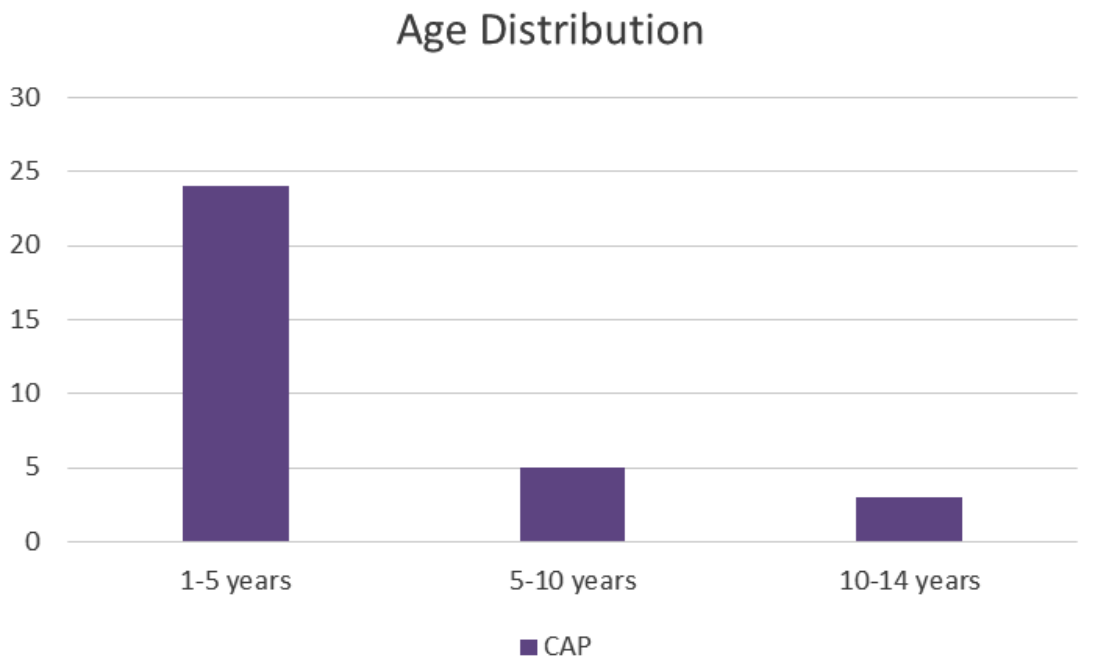

Fig. 1. Age Distribution

chest retractions, tachypnoea, cyanosis, mean temperature, and Spo2 in both *M. pneumoniae* Ig M +ve and -ve groups were 0.100, 0.100, 0.189, 0.049, 0.336, NA, 0.159, 0.449, and 0.237, respectively.

It is clear from Table 6 that out of a total of 5 *M. pneumoniae* Ig M +ve patients, no patient had a hyperinflated lung field, whereas 2 (40%) patients had a diffuse reticular pattern and lobar consolidation, and 1 (20%) patient had para hilar infiltration. In the *M. pneumoniae* Ig M-ve

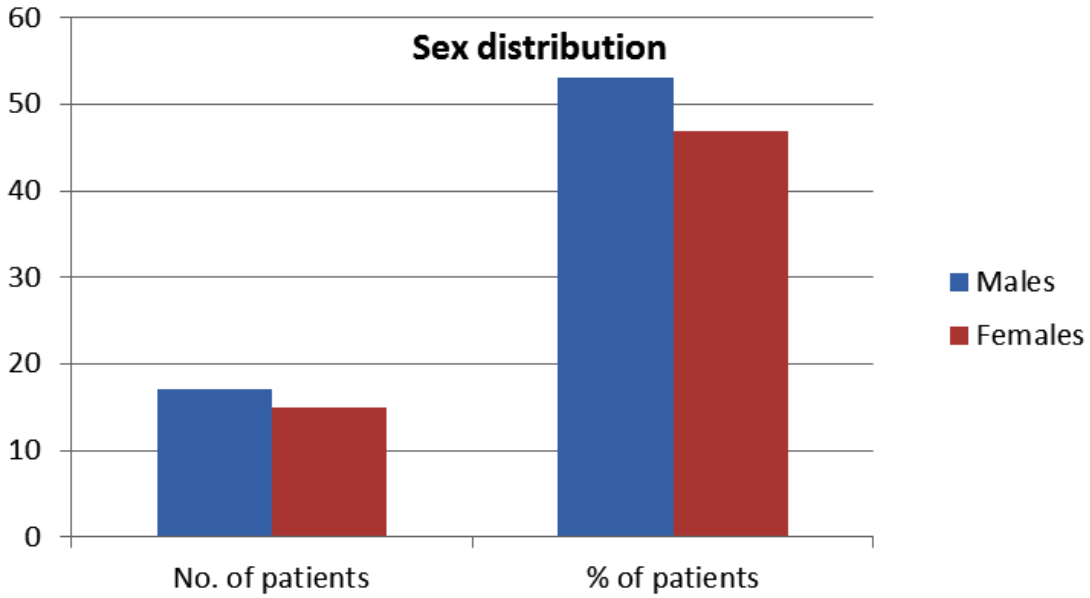

Fig. 2. Sex Distribution

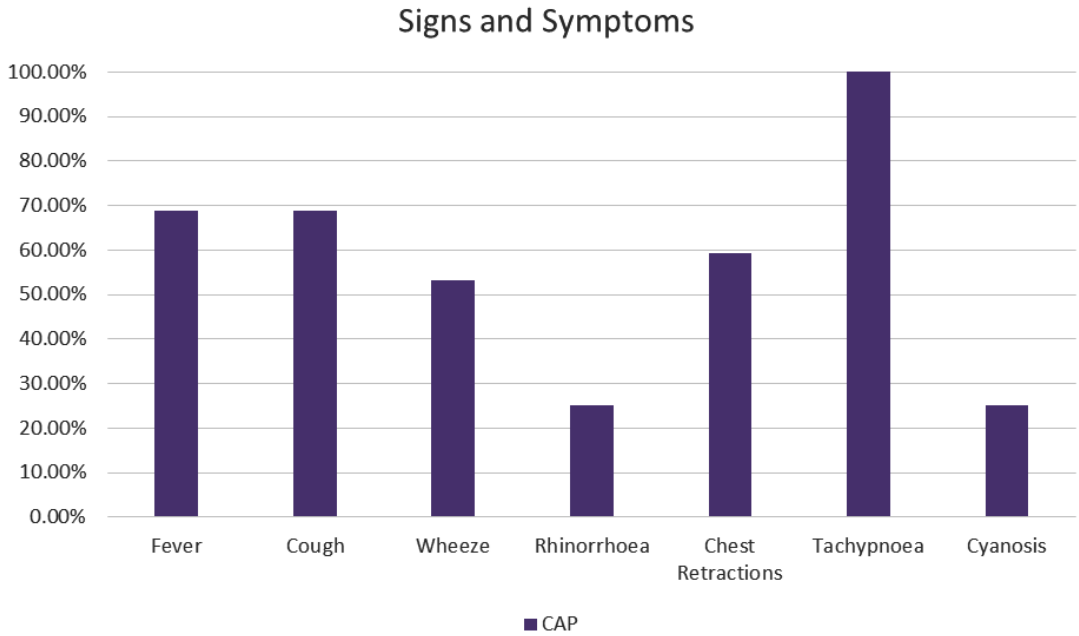

Fig. 3. Signs and Symptoms

Table 3. Radiological findings among CAP

Radiological Findings	CAP(n=32)
Hyperinflated lung fields, n (%)	0
Diffuse Reticular pattern, n (%)	10 (31.25%)
Lobar consolidation, n (%)	19 (20.65%)
Para-hilar infiltration, n (%)	3 (9.38%)

group, no patient had a hyperinflated lung field; 8 (29.63%) patients had a diffuse reticular pattern; 17 (62.96%) patients had lobar consolidation, and 2 (7.41%) patients had para hilar infiltration. In both the *M. pneumoniae* Ig M + ve and - ve groups, the corresponding P values were NA, 0.645, 0.336, and 0.374, respectively.

DISCUSSION

Based on age, the majority of patients, i.e., 24 (75%) patients with CAP, were 1–5 years of age.

Table 4. Sub-group analysis among CAP (between IgM + and IgM -)

Demographic parameters Among CAP (n=32)	*M. pneumoniae* IgM +(n=5)	*M. pneumoniae* Ig M -(n=27)	χ^2 value	p-value
Age				
Mean Age (±SD), years	2.84 ± 2.13	4.00 ± 3.94	-	0.529
1-5 years,n (%)	4 (80%)	20 (74.07%)	0.079	0.778
5-10 years, n (%)	1 (20%)	4 (14.81%)	0.086	0.769
10-14 years, n (%)	0 (0%)	3 (11.11%)	0.613	0.43
Sex				
Male, n (%)	2 (40%)	15 (55.56%)	0.409	0.522
Female, n (%)	3 (60%)	12 (44.44%)		
Mean weight (±SD), kg	12.06 ± 5.35	14.15 ± 7.84	-	0.574
Mean Height (±SD), cm	84.80 ± 17.82	91.59 ± 23.93	-	0.552
Mean BMI (±SD), kg/m^2	16.07 ± 1.97	15.86 ± 2.18	-	0.843
Family h/o wheeze, n (%)	3 (60%)	8 (29.62%)	1.724	0.189
Hospitalization, n (%)	2 (40%)	18 (66%)	1.28	0.257

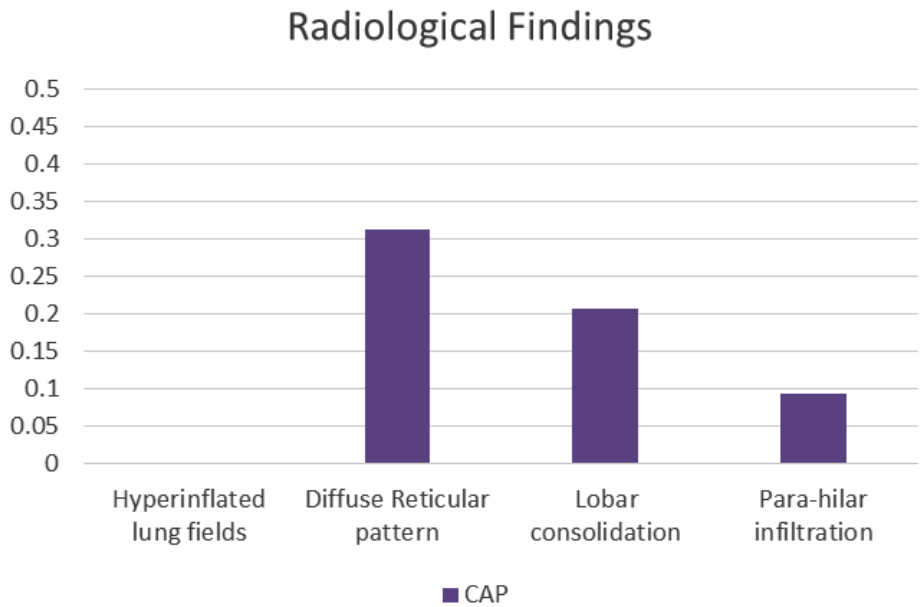

Fig. 4. Radiological Findings

This finding corresponds to previous studies that demonstrate that CAP is more prevalent in young children. With a frequency of 34 to 40 cases per 1,000 children in Europe and North America, CAP has been among the most prevalent severe illnesses in children[18, 19, 20].

Although CAP-related deaths are uncommon in developed nations, lower respiratory tract infection is a prominent cause of childhood deaths in developing nations[21, 22]. However, out of the total 32 cases, only 5 (15%) patients were *M. pneumoniae* Ig M positive, and the rest 27 (85%) cases were *M. pneumoniae* Ig M negative. The majority of the 5 (15%) *M. pneumoniae* -IgM+ patients were between the ages of 1 and 5 years old. However, this does not hold true with data from previous studies, which demonstrated that most of the *M. pneumoniae* cases prevail in children older than 5 years[23]. Therefore, it has been advised to conduct further studies on a large sample size in

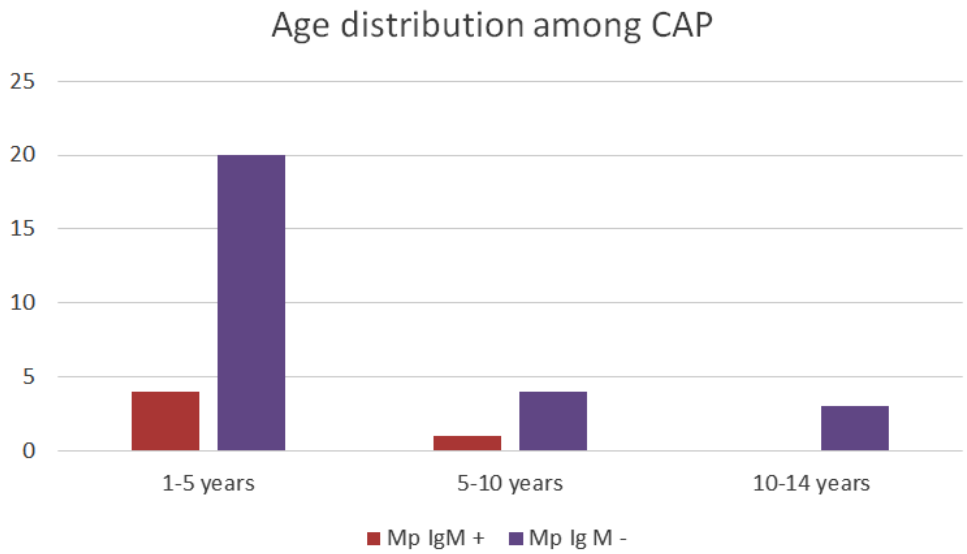

Fig. 5. Age distribution among CAP

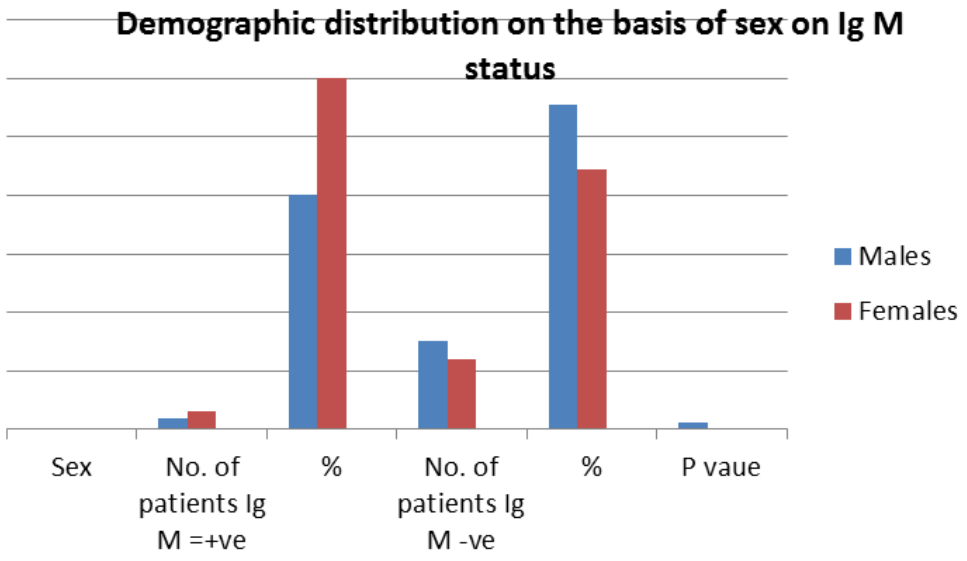

Fig. 6. Demographic distribution on the basis of sex on Ig M status

this domain to find out the likely age group affected by *M. pneumoniae* and the possible reason behind its occurrence in this particular age group.

Based on sex, 17 (53.13%) patients were males suffering from CAP and 15 (46.88%) patients were females. This finding is in agreement with previous studies which support the notion

Table 5. Signs and symptoms among IgM+ and IgM- subgroups (CAP)

Signs and Symptoms	*M. pneumoniae* IgM +(n=5)	*M. pneumoniae* (n=27)	χ^2value	p-value
Fever, n (%)	5 (100%)	17 (62.96%)	2.694	0.100
Cough, n (%)	5 (100%)	17 (62.96%)	2.694	0.100
Wheeze, n (%)	4 (80%)	13 (48.15%)	1.718	0.189
Rhinorrhoea, n (%)	3 (60%)	5 (18.52%)	3.872	0.049
Chest Retractions, n (%)	2 (40%)	17 (62.96%)	0.922	0.336
Tachypnoea, n (%)	5 (100%)	27 (100%)	NA	NA
Cyanosis, n (%)	0	8 (29.63%)	1.975	0.159
Mean Temperature(±SD)	100.18 ± 0.64	99.83 ± 0.96	-	0.449
Mean SpO2% (±SD)	95.40 ± 2.07	92.48 ± 5.28	-	0.237

Table 6. Radiological findings among IgM+ and IgM- subgroups (CAP)

Radiological Findings:	*M. pneumoniae* IgM +(n=5)	*M. pneumoniae* Ig M -(n=27)	χ^2value	p-value
Hyperinflated lung fields, n (%)	0	0	NA	NA
Diffuse Reticular pattern, n (%)	2 (40%)	8 (29.63%)	0.2111	0.645
Lobar consolidation, n (%)	2 (40%)	17 (62.96%)	0.922	0.336
Para-hilar infiltration, n (%)	1 (20.00%)	2 (7.41%)	0.787	0.374

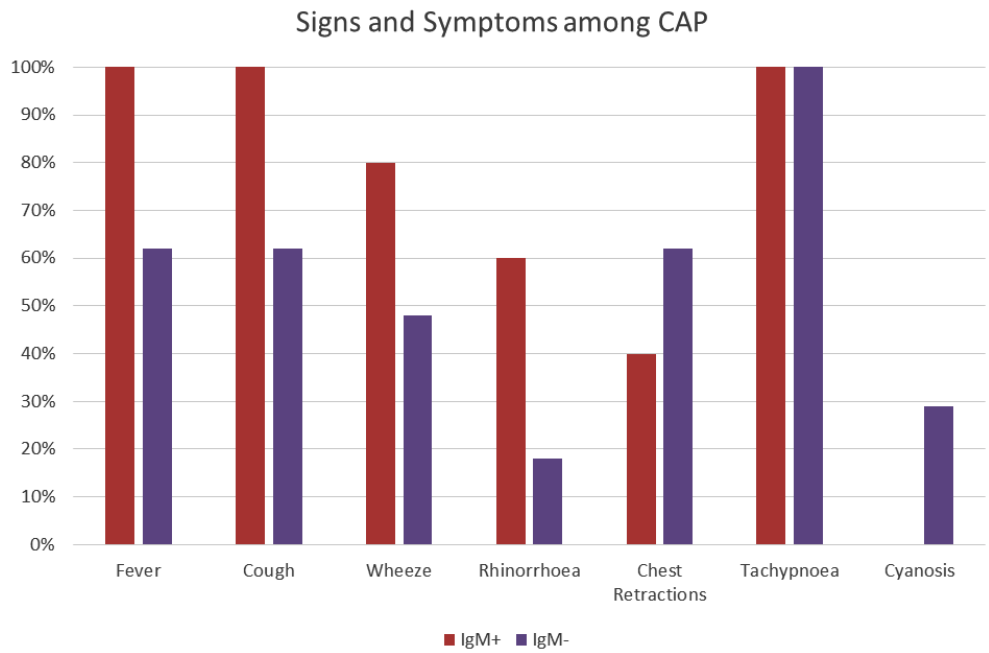

Fig. 7. Signs and Symptoms among CAP

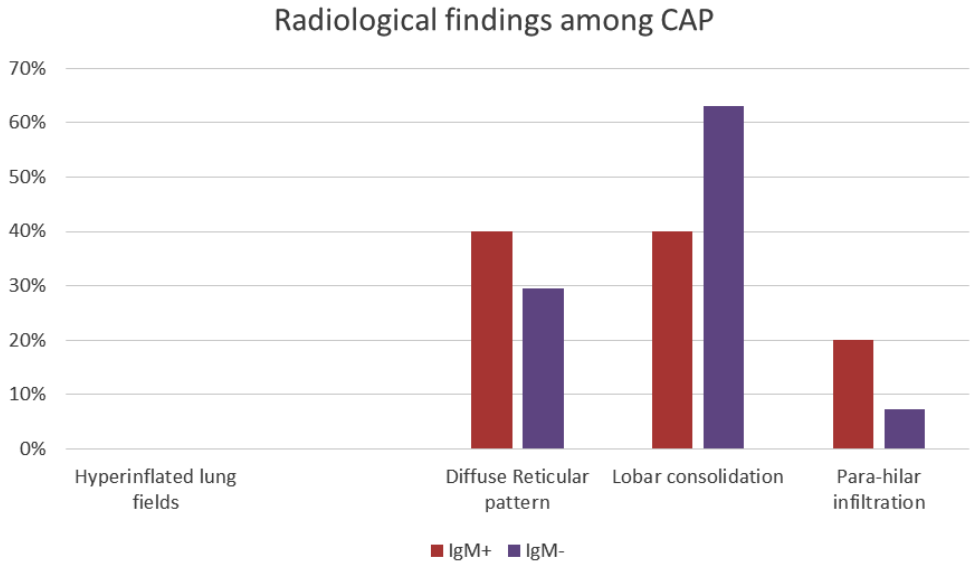

Fig. 8. Radiological findings among CAP

that males are more likely to suffer from lower RTIs. The reviewed data also showed that males tend to have a more severe course of respiratory tract infection than females, resulting in increased deaths in males, particularly in community-acquired pneumonia cases. The involvement of sex hormones in immune system regulation may be responsible for observed sex variations in the occurrence and intensity of certain forms of RTIs, particularly in adolescents and adults[24]. However, out of a total of 5 (15%) *M. pneumoniae* IgM +ve patients, 3 were female and 2 were male which may be an incidental finding and does not have any clinical significance. 8 (25%) out of a total of 32 patients had family H/o wheeze of which 3 children were *M. pneumoniae* Ig M +ve. In another trial by Biscardi *et, acute M pneumoniae* infection was located in 20%[14] (24/119) of the subjects already diagnosed with asthma during their recent exacerbation. Acute *M. pneumoniae* was identified in 26 (50%) of the 51 patients who were having their first episode of asthma[14]. However, given hospitalization, 20 (62%) patients required hospitalization indicating the severe nature of CAP infection. Bhat et al[25] in their study put forth that most of the CAP cases requiring hospitalization belong to the under-5 age group. In our study, most of the children hospitalized had etiologies other than *M. pneumoniae*, and only 2 patients of the total 5 *M. pneumoniae* Ig M +ve required hospitalization.

Based on clinical features, all 32 patients had fast breathing (100%); 22 (68.75%) patients had fever and cough; 19 (59.38%) had chest retractions; 17 (53.13%) had wheeze, and 8 (25%) patients had rhinorrhoea and cyanosis. The mean temperature and SpO2 were 99.89 0.92 and 92.94 5.01, respectively. Five of the 22 (68.75%) patients with fever and cough were *M. pneumoniae* Ig M +ve, while the remaining 17 (62.96%) were *M. pneumoniae* Ig M -ve. There were 5 *M. pneumoniae* IgM+ve and 27 *M. pneumoniae* Ig M -ve patients among the 32 patients with tachypnea. There were two M. *pneumoniae* positive patients and seventeen *M. pneumoniae* Ig M negative patients among the 19 patients who had chest retractions. Four of the 17 wheezing patients tested positive for *M. pneumoniae* IgM+ve while 13 tested negatives. Three of the rhinorrhea patients had *M. pneumoniae IgM*+ve and five had *M. pneumoniae* IgM -ve. None of the eight cyanotic patients tested positive for IgM. To help medical and non-medical healthcare professionals diagnose lower respiratory tract infections (LRTIs) in the absence of radiological evidence, the WHO has created an algorithm[26] This algorithm is still helpful as a clinical tool in the UK, even though it was created for use in developing nations. Tachypnoea

is highlighted as a key sign of pneumonia in the WHO algorithm, which is consistent with our study as well. Tachypnoea, as defined by the WHO, has a sensitivity of 74% with 67% specificity for radiologically diagnosed pneumonia. When dealing with children who menstruate early, doctors must be cautious. In children with co-morbid illnesses like asthma, tachypnea as a marker of pneumonia must be used with caution because it can indicate a worsening of the underlying condition. Even when it is present together with a fever and a cough, an antibiotic may not always be necessary[27]. It has also been discovered that a high temperature in young children (up to 3 years old) can indicate pneumonia[28, 29]. A sign of bacterial pneumonia is a temperature greater than 38.5 °C[30]. According to the BTS recommendations, pneumonia is indicated in children under the age of three when a fever >38.5 °C, chest retractions, and respiratory rate >50 are present. In older children, breathing difficulties by themselves are a more reliable indicator. However, the clinical presentation of M. pneumonia is often compared with other atypical microorganisms, particularly *Chlamydia pneumoniae*, viruses, and bacteria. *M. pneumoniae* may[31] also be found in the lungs concurrently with other microbes, and there is some corroboration from human and animal studies showing that infection with *M. pneumoniae* may either initiate or possibly flare up the subsequent infections with different respiratory pathogens[32], such as *S. pyogenes* and *Neisseria meningitides*. Immunosuppression or a change in respiratory tract commensals caused by the co-existence of *M. pneumoniae* are two possible explanations for such an agonistic effect. The acute febrile phase typically lasts a week in uncomplicated cases, whereas the cough and malaise may exceed two weeks. If antibiotics are taken early in the disease, the duration of symptoms and signs will typically be shorter. The clinical features observed in our study did not vary greatly from those mentioned in other studies[33, 34, 35] except for tachypnea being the most common symptom, whereas it was fever and cough in others.

M pneumoniae pneumonia is a significant contributor to acute respiratory tract infections, particularly when considered as a possible cause of the clinical condition known as atypical pneumonia. Early diagnosis of *M. pneumoniae* infection is crucial to enhancing the identification of people in need of treatment and avoiding needless antibiotic administration. The most popular technique for identifying *M. pneumoniae* infections is serology. Furthermore, as antibody reactions can frequently be found even when the organism may not be collected through cultures, antibody identification is a more sensitive marker of *Mp* infection than the organism itself[54]. However, the sensitivity and specificity of ELISA Ig M for *M. pneumoniae* infection were 84.62% and 81.33% respectively[55]. *M. pneumoniae*-specific IgM antibodies may not be detectable for the initial one week of the illness but remain in the blood for several months after infection[56]. As a result, a single test of serology in an acute phase of the illness is not necessarily a reliable diagnostic method for acute *M. pneumoniae* infection. The earlier study found that the first positive test rate for *M. pneumoniae* IgM upon hospital admission was 63.6%, with the cumulative positive test rate increasing to 97.5% one week later[57]. Two serologies with the conversion from initial negative to positive or a rise in antibody titers (i.e. a two times increase *in M. pneumoniae* IgM or a four times increase in *M. pneumoniae* IgG) between the acute and convalescent phase point towards a very reliable diagnosis[58]. However, in individuals with compromised immunity, such as young children, the immunological response may be too weak to generate the antibodies[58] as seen in our study where most of the patients were between 1-5 yrs of age. Therefore, serology alone should not be considered as a basis for diagnosing *M. pneumonia* and specific antibiotics must be considered even in serology-negative cases when suspicion of atypical pneumonia particularly *M. pneumonia* is high.

Although there were certain limitations to our study on the grounds of infrastructure, resources, financial support, and small sample size, this study may serve as a relay and open a new door for further research on a large sample size with better tools, research techniques, and more appropriate parameters to obtain a more precise and authentic result.

CONCLUSION

Mycoplasma pneumoniae CAP exhibited generalized features of fever, cough, diarrhea, and other vague symptoms with radiological findings of

Hyperinflated lung field, Diffuse reticular pattern, Lobar consolidation, and Para hilar infiltration.

It has been concluded from the above study that the prevalence of *Mycoplasma pneumoniae* in community-acquired pneumonia cases based on serology is low. However, since serology is not 100% sensitive and specific and may vary in titers serology alone. Owing to the severity of the disease, a differential diagnosis of *M. pneumonia*e pneumonia must always be kept in consideration particularly in unremitting cases of CAP by common antibiotics where suspicion of *M. pneumonia* is high.

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Conflict of interest

The authors have no conflict of interest.

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