



Pulmonary Medicine

ACUTE RESPIRATORY ILLNESS WITH DIFFUSE LUNG OPACITIES IN POST PANDEMIC ERA -A TERTIARY CARE HOSPITAL EXPERIENCE

Duvvada Srikavya	Post Graduate
K.hitesh Cheran	Post Graduate
Somanath Dash*	MD Professor*Corresponding Author
Kondal Rao Kola	MD Associate Professor
Sivaraj Karri	MD, Assistant Professor

ABSTRACT

Introduction: Recent COVID19 pandemic mostly affected the lungs of the patients, causing acute respiratory illness having high morbidity and mortality. Presently, there is significant drop in the incidence of disease may be because of successful implementation of COVID19 immunization. But still getting cases suffering from acute respiratory illness with bilateral diffuse lung opacities. We conducted a hospital data-based retrospective study of all such patients who have been admitted to RICU with RTPCR negative for COVID19. **Aim and objectives:** To analyze the clinico radiological spectrum and treatment outcome of patients with acute respiratory illness with bilateral diffuse lung opacities in post pandemic era. **Material and methods:** Hospitalized data of all patients admitted to RICU with acute respiratory illness in the period of January 2022 to August 2022 were analyzed. **Observations:** 23 patients were admitted to the RICU with symptoms of acute respiratory illness. Among them there were 11 female and 12 male. Mean age was 50.91 ± 15.47 years. All patients presented with symptoms of cough, sob, fever of acute onset (≤ 10 days duration). Mean spo2 at the time of admission was 74.6% @ room air. Previous history of COVID19 was present only in 3 patients and immunization was done for all patients. Nine patients were smokers. Radiologically diffuse consolidations with ground glass opacities predominantly involving lower lobes were present in all cases. All patients had neutrophilic leucocytosis blood picture with grossly elevated levels of CRP, D-dimer. 15 patients were intubated and mechanically ventilated, out of which 3 patients were survived. **Conclusion:** Severe acute respiratory illness is still a presentation during this post-pandemic time, the cause of which is not exactly known. Most of the patients are in middle-age group and with neutrophilic leucocytosis and raised inflammatory mediators.

KEYWORDS : COVID19, bilateral lung infiltrates, RTPCR negative.

INTRODUCTION:

Recent COVID19 pandemic mostly affected the lungs of the patients, causing acute respiratory illness having high morbidity and mortality. Early diagnosis of COVID19 is the primary goal for the successful management of COVID 19 patients. Real time reverse transcription polymerase chain reaction (RTPCR) for nucleic acid detection from respiratory tract specimens has remained key test for the diagnosis of the disease. Presently, there is significant drop in the incidence of disease may be because of successful implementation of COVID19 immunization. But still we are getting cases suffering from acute respiratory illness with bilateral diffuse lung opacities. We conducted a hospital data-based retrospective study of all such patients who have been admitted to RICU recently with RTPCR negative for COVID19.

AIM AND OBJECTIVES:

To analyze the clinico-radiological spectrum and treatment outcome of patients with acute respiratory illness with bilateral diffuse lung opacities in the post pandemic era.

MATERIAL AND METHODS:

Hospital data of all patients admitted to RICU with acute respiratory illness in the period of January 2022 to August 2022 were analyzed.

OBSERVATIONS:

23 patients were admitted to respiratory ICU with the symptoms of acute respiratory illness. Among them there were 11(48%) females and 12(52%) males. Mean age was 50.9±15.4 years. 12(52.1%) patients were in the age group of 41-60 years. 1 patient each (4.3%) were in the extremes of age group (<20 years and >80 years). Nineteen (82.6%) patients presented with acute onset of symptoms of <7 days. All the patients were presented with varying symptoms like dyspnoea in all cases, fever(82.6%), cough(73.9%) etc. 3 patients were having pre-existing lung diseases like bronchiectasis (1), chronic obstructive pulmonary disease(1) and old PTB(1). Overall 13 patients had other co-morbidities like diabetes, hypertension, hypothyroidism, CAD, CVA, Cancer either singly or in combination. Nineteen(82.6%) patients were either partially or completely vaccinated for COVID 19. Eighteen patients (78.2%) out of 23 were having spo2 of <90% in room-air at the time of presentation. Out of which 12 patients (66.6%) died which shows that high mortality present in the patients presented with low saturations (<90%) which was statistically significant

(p=0.01). 6 patients had mild PAH, 6 patients had moderate PAH, and 1 patient had severe PAH on 2d echo findings of total 23 patients. 15 patients required endo-tracheal intubation and mechanical ventilation among the study participants. Eleven patients were discharged home and the recovery rate was 48%.

Clinical features	Value
Age (years), mean(SD)	50.9±15.4
Male gender	11(48%)
History of pre existing lung disease	3(13%)
Other comorbidities	
Diabetes	9(39%)
Hypertension	7(30.4%)
Coronary artery disease	1(4.3%)
CVA	2(8.6%)
Hypothyroidism	1(4.3%)
HIV	1(4.3%)
History of smoking	9(39%)
COVID 19 vaccination	19(82.6%)
Duration of fever	3.8±3
Duration of cough	3.4±3
Duration of SOB	3.5±2.5
SPO2<90% in room air	18(78.2%)
PAH on 2d echo	13(56.5%)
Mechanical ventilation	15(65%)
Recovery rate	48%

Among the laboratory parameters, haemoglobin of less than 10mg/dl was seen in 4 patients(17.4%) and more than 10mg/dl seen in 19 patients(82.6%). 16 patients had leucocytosis (>11,000cells/cumm), with decreased lymphocyte count in all cases. There was a rise in inflammatory markers like CRP – more than 50mg/dl present in 21(91.3%) patients and d dimer- more than 800 present in 19(82.6%) patients.

Chest radiograph shows mixed patterns of GGOs and consolidations in 12(52.1%) patients, only GGOs in 6 (26%) patients, only consolidations in 5 (21.7%) patients.

As per the HRCT thorax findings, the median CT severity score was 26. Fourteen (60.8%) patients had value between 21 and 29. Common findings in HRCT thorax were GGOs mixed with consolidations with bilateral location and diffuse distribution.

DISCUSSION:

Novel corona virus COVID 19 is a brand-new, extremely contagious viral disease affected across the world. Fever, cough, and shortness of breath are the three cardinal clinical symptoms that determine the diagnosis. The gold standard for the diagnosis of COVID 19 has been the RTPCR test. X-rays are thought of as the first-line radiological tool for the diagnosis of COVID 19; however, CT is superior in disease identification and follow-up.

In this hospital based retrospective observational study, we described the clinical, laboratory and radiological features of 23 patients who were admitted to respiratory ICU with acute respiratory illness and diffuse lung opacities and RTPCR negative for COVID 19.

Fever, dyspnoea, cough were the most frequent presenting symptoms of varying duration in the present study. Similar study done by Arnab and his colleagues reported history of fever, cough and dyspnea in more than 60% of the cases. Clinical symptoms and signs like high respiratory rate, low oxygen saturation at the time of presentation raised clinical suspicion of COVID 19 among the patients in our study.

Emre Pakdemirli and colleagues did a retrospective study of 19 patients, out of which 5 patients had clinical findings of COVID 19 and positive CT features but RTPCR test was negative for COVID 19. Typical CT findings were multifocal ground glass opacity (GGO) and/or mixed GGO and consolidative changes which are bilateral, posterior and peripheral predominance which were similar to the present study.

A descriptive cross sectional study was conducted by Shazia Yusuf et al, on 48 patients with high clinical suspicion for COVID 19 and a negative RTPCR test. There was male predominance (62.5%) and the mean age was 48.4 years. And patients presented with predominant symptom of fever (97.9%), followed by cough (52%), shortness of breath (20.8%).

Among the laboratory parameters, common findings in COVID19 RTPCR POSITIVE patients include raised CRP, D-dimer and lymphopenia. We also found similar blood pictures in our patients in spite of being RTPCR negative. Our findings were supported by the findings of Arnab et al, which showed raised CRP, D-dimer, ferritin, LDH levels with lymphopenia.

The predominant findings in HRCT among RT-PCR-positive COVID-19 pneumonia patients include bilateral location, diffuse opacities or peripheral opacities, isolated GGO or mixed with consolidations, crazy paving appearance, subpleural bands, fibrotic changes with bronchial wall thickening, bronchiectasis, pleural effusion, hilar lymphadenopathy, pulmonary nodules in very few patients. The HRCT findings in our study were similar to these findings but RTPCR was negative for COVID19. Arnab et al reported no significant difference in the distribution of lung alterations and extent of lung damage between RT-PCR-positive and -negative patients. In our study, CT severity score was <20 in 3 (13%), 21-29 in 14 (60.8%), ≥30 in 6 (26.2%) patients.

CONCLUSION:

In the context of current pandemic, patients presented with acute respiratory illness and negative RTPCR COVID 19 test, CT features of bilateral diffuse infiltrates should be regarded as strongly suspicious for COVID19 pneumonia. A timely decision based on these findings can improve the clinical outcome of patients and significantly help in isolating the infected patients and avoiding further spread of infection.

REFERENCES:

- 1) Banerjee A, Mukhopadhyay O, Santra R, Bhadury A, Chaudhuri S. Clinical, laboratory and high-resolution computed tomography (HRCT) thorax profile of reverse transcription polymerase chain reaction (RT-PCR) negative COVID-19 suspects with moderate to severe disease. *J Educ Health Promot* 2022;11:333.
- 2) Pakdemirli E, Mandalia U, Monib S (August 22, 2020) Positive Chest CT Features in Patients With COVID- 19 Pneumonia and Negative Real-Time Polymerase Chain Reaction Test. *Cureus* 12(8): e9942. DOI 10.7759/cureus.9942
- 3) Yusuf S, Ahmad H, Zeb R, et al. (March 21, 2021) High-Resolution CT Chest Findings in Suspected COVID-19 Pneumonia Patients With Negative Real-Time Polymerase Chain Reaction Assay. *Cureus* 13(3): e14023. DOI 10.7759/cureus.14023