ORIGINAL ARTICLE

# Chest X-Ray Results in Covid-19 Positive Individuals Diagnosed at the Corona Center Using the British Society of Thoracic Imaging CXR Arrangement

USMAN TAHIR[1], FATIMA KHALID[2], UMAR ALI[3], NAUMAN AHMED[4], AMINA BIBI[5], MUHAMMAD IMRAN[6]
[1]SHO, Internal Medicine, Shaikh Zayed Hospital Lahore
[2]Women Medical Officer, THQ Pattoki, Kasur
[3]Medical Officer, Medicine, THQ Kunjah, Gujrat
[4]PGR, EYE UNIT 1, Lahore General Hospital, Lahore
[5]CMH Rawlakot, AJK, Email: aminashafiq93@gmail.com
[6]Accident and Emergency Department, DHQ Hospital Layyah
Correspondece to: Usman Tahir, Email: Utahir1996@hotmail.com

## ABSTRACT

**Aim:** To assess Chest X-ray results in COVID-19 positive individuals diagnosed at the Corona Percolation Center, Mayo Hospital, Lahore, using the British Society of Thoracic Imaging CXR classification.

**Methods:** Altogether RT-PCR COVID-19 positive individuals tested at the Corona Percolation Epicenter, Mayo Hospital, Lahore between June 25th, 2020 and May 20th, 2021 included in this research. The cohort's mean age with age range was computed. The present symptoms and co-morbidities have been examined and tallied in rapports of facts and percentages. The outcomes of portable CXRs were categorized using the BSTI categorization and described in terms of numbers and percentages.

**Results:** The participants' average age remained 46 years. Cough (69%) was the most common symptom, followed by fever (20%), difficulty breathing (42%), sore throat (6%), and loss of flavor and aroma (6%). (18 percent). The most common co-morbidity included hypertension (six) (22 percent). 3 participants (8%) had normal CXRs, whereas eight (25%) showed characteristic COVID CXRs. There were 23 (73%) ambiguous individuals, with just one (4%) having solitary long illness. Five (14% of individuals) had widespread lung disease, whereas 20 (64%) had detection of lung participation. The majority of 21 individuals (65%) had bilateral middle and lower zonal lesions.

**Conclusion:** COVID-19 CXRs in this investigation showed a range of opacities from pure clear glass to mixed grounds glass opacification to accumulation in the contralateral peripheral intermediate and reduced lung zones. In these cases, the BSTI CXR writing categorization of Corona is legitimate, with both the inclusion of central zonal participation in conventional COVID-19 requirements rather than actually lower zone engagement.

**Keywords:** Chest X-ray results in COVID-19 positive, diagnosed, Mayo Hospital, Lahore.

## INTRODUCTION

COVID 19's impact is becoming clearer by the day. This epidemic has spread all across the world. This sickness remains unknown. Researchers don't understand why this disease has various changes in various people, regardless of age, color, or geographic location [1]. COVID 19 positive individuals predispose individuals to individuals on ventilators in addition, eventually, decease [2]. Radiological examination is single method of seeing within body. In COVID 19 suspected instances, CXRs are the most typically done inquiry. Depending on European individuals, the British Society of Thoracic Imaging has categorized CXR results [3]. Because our civilian communities varied in terms of environment and illness tendencies, it was expected to detect a design of CXR results in our COVID-19 positive individuals. CT scan remains very favored examination for illness identification and follow-up, even though this is not viable to utilize this as the screening tool because of their limited stock and time-consuming purification procedures [4]. The goal of our current research was to assess chest X-ray results in the current individuals using the British Society of Thoracic Imaging categorization and to assess illness general trend of any divergence or resemblance. Second reason is because basic health units have X-ray equipment, so this research will improve our doctors' comprehension of CXR results in supposed COVID 19 individuals [5].

## METHODOLOGY

It is retrospective descriptive research that was carried out at the Mayo hospital's isolated unit in Lahore. All RT-PCR COVID 19 positive cases who offered to the Corona Filtration Center at Mayo Hospital Lahore between June 25th, 2020 and May 20th, 2021 were included. Lahore Mayo Hospital is the teaching hospital connected having Lahore Medical University." It features the COVID-19 filtration facility wherein suspicious individuals are first checked using transportable chest x-rays and an RT-PCR throat swab. Chest roentgenograms remain saved on the Mayo Hospital Lahore's central computer server. This research includes chest radiographs of altogether COVID-19 certified individuals from the 25th of June 2020 to the 20th of May 2020, irrespective of age, and then were categorized using the BSTI category. Statistical treatment and outcomes: Quantitative factors such as age are provided as an average including an age range. Sex and co morbidity were reported as frequency and percentages as qualitative factors. The portable CXR data were given as a percentage and frequency of the bivariate analysis.

## RESULTS

COVID-19 forty as during indicated time period, 30 positive cases were recorded; all were included in the research. The participants' average age was 49, with only a range of 10-80 years. Two of the sufferers aged seven years old. There had been 25 men (82 percent) and eight women (23 percent). This research suggests a male propensity for this condition. 14 (37%) of the individuals had a travel information. Only 8 participants (21%) had a favorable background of interaction. There were no co morbidities in nine (21%) of the individuals. Seven (17%) individuals had ischemic heart illness besides hypertension, four (13%) individuals had diabetes, three (8%) individuals experienced smokers, and seven (20%) patients had additional conditions listed in Table-I. Per the BSTI COVID-19 CXR classification, every thirty participants' chest X-rays were classed as normal, classical, or uncertain. Two patients (8%) showed normal chest X-rays, whereas nine (28%) presented the characteristic appearance of bilateral peripheral, basal ground glass consolidation. The remaining 23 cases (73%) remained classified as uncertain, with two (5%) having unilateral lung illness and twenty (68%) having bilateral lung disease. Wordy lung activation remained detected in 4 (14%) of the individuals, while peripheral lung activation was seen in 19 (64%) of the patient populations. The majority of ambiguous individuals, 21 (66%) had bilateral middle and lower zonal activation, whereas just three (9%) had middle zone involvement. Pleural effusion (5 percent), old healed calcific granulomas (2 percent), in addition bilateral hilar lymphadenopathy (2 percent) had related characteristics in the undetermined groups (5 percent). There was no evidence of cavitating lesions or pneumothorax.

Table 1:

| Results | Sum of Patients |
|---|---|
| Bilateral, peripheral | 8 (25%) |
| NORMAL correlated | 3 (9%) |
| Bilateral | 23 (69%) |
| Unilateral | 2 (5%) |
| Peripheral lung involvement | 5 (15%) |
| Diffuse lung involvement | 21 (68%) |
| Only Middle zones involvement | 3 (9%) |
| Middle and lower zones involvement | 21 (68%) |

Table 2:

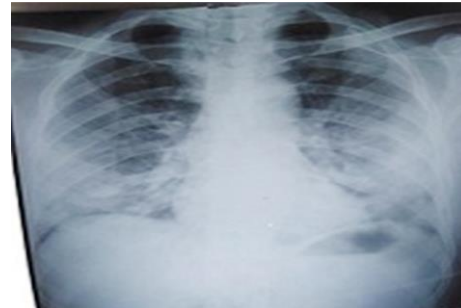| S. No | | | Results |
|---|---|---|---|
| 1 | Gender | Female | 8 (24%) |
| | | Male | 23 (76%) |
| 2 | Age | Range | 8-80 yrs |
| | | Mean | 43 yrs |
| 3 | Contact | Shortness of breath | 22 (66%) |
| | | Cough | 18 (57%) |
| | | Fever | 6 (18%) |
| | | other | 13 (41%) |
| 4 | Travel | | 11 (35%) |
| 5 | Symptoms | GIT symptoms | 8(27%) |
| | | DM | 3(10%) |
| | | Sore throat | 2(7%) |
| | | No co-morbid | 3(10%) |
| | | Hypertension | 4(13%) |
| | | Smoker | 7(23%) |
| | | Loss of taste and smell | 6(20%) |



Figure 1:



Figure 2:

## DISCUSSION

Viruses from the coronaviral family had already caused acute respiratory suffering disorder in 2008 and Middle East respiratory in 2016. COVID 19 viruses have lately emerged and remain the mystery. A lot of research remains being conducted throughout the globe, and information has been shared. Even now in industrialized nations, transportable chest X-ray remains routinely done radiological study in footings of practicality in addition cost efficiency [6]. In the specialized corona filtration facility, such as Mayo Hospital Lahore, where more than a hundred suspected COVID 19 individuals are examined on a daily basis, transportable chest X-ray is best radiological screening tool. Severe disinfection procedures may be implemented, and that would not be practicable in a busy general OPD X-ray room. Patients of significant diagnostic suspicion having high CXR results are retained in isolation wards inadequate RT-PCR kits and late outcomes of up to 2 days. CXR has a poor sensitivity, trying to identify COVID 19 from other viral bacterial pneumonia solely based on CXR results [7]. In a specialized corona filtration facility, such as Mayo Hospital Lahore, where more than a hundred suspected COVID 19 individuals are examined on a daily basis, transportable chest X-ray is the best radiological broadcast instrument. Strict disinfection procedures may be implemented, and that would not be practicable in a busy general OPD X-ray room. Patients of significant diagnostic suspicion having high CXR answers are retained in isolation wards inadequate RT-PCR kits and delayed results of up to 48 hours [8]. CXR has a poor sensitivity, trying to identify COVID 19 from other viral bacterial pneumonia solely based on CXR results. CT scan is ideal imaging modality for initial illness identification and consequences, but it has infection prevention and control problems such as tight cleaning requirements, ventilation,

and airflow. In the HY Yoon et al research, 36% of individuals had aberrant first radiography results, whereas 94% of individuals in our analysis had abnormal chest results. These initial abnormal chest signs were found in 79.4-83.5 percent of SARS patients and 85.7 percent of MERS patients. Stabilization was identified in 48 percent of patients in the Wong HYF et al. research, which is similar to earlier investigations [9]. Here is yet to be published research in the literature on COVID-19 CXR results in our country, although here have been several research on, Korean, American and Chinese in addition Europe populations. COVID -19 chest X-rays have been classified as standard co-connected to RT-PCR, classical, with numerous bilateral, outlying basal opacities extra bilateral than involuntary, unquantified that does not fit into traditional or non-COVID descriptive terms, as well as non-COVID-19 X-rays with pneumothorax, pleural effusion, in addition pulmonary edema [10].

## CONCLUSION

In the local inhabitants, COVID-19 pneumonia exhibited as the spectrum of clean ground glass, varied ground glass opaqueness, to aggregation in two-sided peripheral low in addition central lung zones. In these individuals, the BSTI chest reportage categorization COVID-19 remains acceptable with both the inclusion of middle zonal participation in traditional COVID-19 standards rather than merely bottom zone engagement.

## REFERENCES

1. Ahorsu, D. K., Lin, C.-Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H., 2020. The Fear of COVID-19 Scale: Development and initial validation. Int. J. Mental Health Addict., Epub ahead of print.doi:10.1007/s11469-020-00270-8. [PMC free article] [PubMed]
2. Armstrong G., Vijayakumar L., Pirkis J., Jayaseelan M., Cherian A., Soerensen J.B., Niederkrotenthaler T. Mass media representation of suicide in a high suicide state in India: an epidemiological comparison with suicide deaths in the population. BMJ Open. 2019;9(7) [PMC free article] [PubMed] [Google Scholar]
3. Augustine, B.D., 2020. COVID-19 to slowdown Pakistan's economic growth: Asian Development Bank. Retrieved 30 April 2020, from https://gulfnews.com/business/covid-19-to-slowdown-pakistans-economic-growth-asian-development-bank-1.70803457.
4. Bhuiyan A.K.M.I., Sakib N., Pakpour A.H., Griffiths M.D., Mamun M.A. COVID-19-related suicides in Bangladesh due to lockdown and economic factors: Case study evidence. Int. J. Ment. Health Ad. 2020 In press. [PMC free article] [PubMed] [Google Scholar]
5. Dsouza, D.D., Quadros, S., Hyderabadwala, Z. J., Mamun, M., 2020, May 3. Aggregated COVID-19 suicide incidences in India: Fear of COVID-19 infection is the prominent causative factor. PsyArXiv, Epub ahead of print. 10.31234/osf.io/7xa4b. [PMC free article] [PubMed] [CrossRef]
6. Goyal K., Chauhan P., Chhikara K., Gupta P., Singh M.P. Fear of COVID 2019: First suicidal case in India. Asian J. Psychiat. 2020;49 [PMC free article] [PubMed] [Google Scholar]
7. Frank Andreas, Fatke Bastian, Frank Wolfgang, Förstl Hans, Hölzle Patricia. Depression, dependence and prices of the COVID-19-Crisis. Brain, Behav. Immunity. 2020 doi: 10.1016/j.bbi.2020.04.068. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
8. Humanitarian Response Baluchistan Drought Needs Assessment (BDNA) report – February 2019 Retrieved 30 April 2020, from https://www.humanitarianresponse.info/en/operations/pakistan/document/balochistan-drought-needs-assessme nt-bdna-report-february-2019 2019.
9. Jahanshahi Asghar Afshar, Dinani Maryam Mokhtari, Madavani Abbas Nazarian, Li Jizhen, Zhang Stephen X. The distress of Iranian adults during the Covid-19 pandemic – More distressed than the Chinese and with different predictors. Brain, Behavior, and Immunity. 2020 doi: 10.1016/j.bbi.2020.04.081. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
10. Mamun M.A., Griffiths M.D. First COVID-19 suicide case in Bangladesh due to fear ofCOVID-19 and xenophobia: Possible suicide prevention strategies. Asian J. Psychiat. 2020;51 [PMC free article] [PubMed] [Google Scholar]