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## **Post- Covid-19 Complications among patients admitted to Al shifa center In Baquba Teaching Hospital During Pandemic 2022**

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## Introduction:

Coronavirus disease 2019 (COVID-19) is a major health concern and can be devastating, especially for the elderly. COVID-19 is the disease caused by the SARS-CoV-2 virus. Coronaviruses are enveloped RNA viruses that are distributed broadly among humans, other mammals, and birds and that cause respiratory, enteric, hepatic, and neurologic diseases. [1 ]

The majority of COVID-19 patients are, however, either asymptomatic or only have mild symptoms; while a few may develop acute respiratory distress syndrome (ARDS), which can be life-threatening or fatal. Although many COVID-19 patients eventually recover, some do not cease experiencing symptoms long after their COVID-19 polymerase chain reaction test turns negative; this is commonly referred to as “post-COVID-19 syndrome” or “long COVID.”[2] So our objective is to estimate the severity and complications associated with this infection.

## Aims of Study:

1. To identify the systemic complications of COVID-19 among Covid-19 Patients.
2. To estimate the severity of disease among patients from COVID-19 units in Diyala province.
3. Study the factors associated with Covid-19 complications.
4. Estimation the Mortality rate among Covid-19 Patients.

## Methods and Patients:

This retrospective study of post Covid-19 complications in Covid-19 patients was conducted in AL-Shifa' unit in Baqubah Teaching Hospital . from January 1st, 2022, to April 1st, 2022.

Inclusion all patients with all age groups who admitted to Al-shifa' unit in Baqubah Teaching Hospital, with either PCR or CT positive, from January 1st, 2022, to April 1st, 2022.

A total of 124 patients who admitted to Al-shifa' unit.

The data for this Study was collected from medical records of Covid-19 patients.

**Results:**

In presented study most of the patients 56.4% (94 patients) were elderly age group (60-90y). While the young age group (19-39y), was the lowest among the age groups 11.25% ( 14 patients). The middle age group (40-59), was 13% ( 16 patients).[Table1]

Table No. 1: Characterization of COVID-19 patients in presented study according to age groups.

| Age range | No. Of Subject | Percentage |
|-----------|----------------|------------|
| 19 – 39y  | Female = 9     | 7.25%      |
|           | Male = 5       | 4%         |
| 40 – 59y  | Female = 9     | 7.25%      |
|           | Male = 7       | 5.6%       |
| 60 – 99y  | Female = 46    | 37%        |
|           | Male = 48      | 38.7%      |
| Total     | 124            | 100%       |

Most of the patients were having co-morbidity and chronic diseases, which associated with the severity of Covid-19 , as we found that majority of patients with co-morbidity had severe course.[Table 2]

Table No. 2: Characterization of COVID-19 patients in presented Study according to Co-morbidity.

| Co-morbidities         | No. Of Subject | Percentage |
|------------------------|----------------|------------|
| Hypertension           | 60             | 48.4%      |
| Diabetes mellitus      | 52             | 42%        |
| Cardiovascular disease | 36             | 29%        |
| Renal disease          | 28             | 22.5%      |
| CVA                    | 12             | 9.6%       |
| Cancer                 | 8              | 6.4%       |
| Liver disease          | 4              | 3.2%       |
| COPD                   | 1              | 0.8%       |

Approximately majority of hospitalized patients with COVID-19, experience severe complications necessitating intensive care. The most common complications among patients in this study was pneumonia (60%) followed by thrombotic events (25%) and ARDS (22%) (Table 3).

Table No. 3: Complications that Found Among Covid-19 patients in presented Study.

| Complications Found | No. Of cases | Percentage |
|---------------------|--------------|------------|
| Pneumonia           | 74           | 60%        |
| Thrombotic events   | 31           | 25%        |
| ARDS                | 28           | 22.5%      |

|                       |    |      |
|-----------------------|----|------|
| Lung Fibrosis         | 20 | 16%  |
| Fungal infections     | 8  | 6.4% |
| CVA (Stroke)          | 6  | 4.8% |
| Bed sore              | 6  | 4.8% |
| Depression            | 6  | 4.8% |
| Shock                 | 6  | 4.8% |
| Acute renal injury    | 4  | 3.2% |
| Preterm delivery      | 1  | 0.8% |
| Uremic encephalopathy | 1  | 0.8% |
|                       |    |      |

Mortality rate was 56.4% (70 patients) Most of the dead about (90%) were of old age with Co-morbidities. Only (3.2%) of patients discharged with improvement, and about (26.6%) 33 patients still in the hospital or referred to another unit for further management. 13.7% of patients (17) discharged from the hospital on their own responsibility without completing treatment.

## Discussion

Most of the patients were having co-morbidity and chronic diseases, which associated with the severity of Covid-19 , as It was found that majority of patients with co-morbidity had severe course.[Table 2]

*In study by Li X., Xu S., Yu M, et al., : People with underlying health conditions including diabetes mellitus, chronic lung disease, obesity and cardiovascular disease are at higher risk of poor outcomes from COVID-19 than those without. [3,4,5,6,7]*

Approximately majority of hospitalized patients with COVID-19, experience severe complications necessitating intensive care. The most common complications among patients in this study was pneumonia (60%), Study by *Wiersinga WJ; Rhodes A; Cheng AC; et al.*, Common complications among hospitalized patients with COVID-19 include pneumonia (75%); [8] ARDS (22.5%). The incidence rate of respiratory failure or ARDS was 19.5%, in study conducted by *Chen N., Zhou M., Dong X. et al. 2020* . [9] Where as Available data conducted by *Wu C Chen X Cai Y et al.* indicate that about 40% of patients with COVID-19 develop ARDS [10]

Thrombotic events either pulmonary embolism or deep venous thrombosis (25%) which diagnosed by doppler US, D-dimer and clinically, *in study done by David Jiménez et al.*, 2019 . Overall incidence of venous thromboembolism (VTE) was 17.0% (95%CI, 13.4–20.9), and 7.1% (95%CI, 5.3–9.1) for pulmonary embolism.[11]

AKI in presented study (3.2%). Guan *et al.*<sup>2</sup> reported an incidence rate of AKI of only 0.5% in 1099 patients from 552 hospitals in China. [12]

The incidence was 3.6% , in *study by Wang D, Hu B, Hu C, et al., 2020.* And 3% in *study by Chen N, Zhou M, Dong X, et al., 2020.* Another *study by Cheng Y, Luo R, Wang K, et al., 2020.* Was 5.1% . [13,14,15]

Approximately (16%) of our patients end with Lung Fibrosis.

*study by Deependra Kumar Rai, Priya Sharma, and Rahul Kumar .* showed that, 4% of patients with a disease duration of less than 1 week, 24% of patients with a disease duration of between weeks 1 and 3, and 61% of patients with a disease duration of greater than 3 weeks, developed fibrosis. [16]

Another *study by Shital Vishnu Patil, Gajanan Gondhali, Rajesh Patil.,* observed lung fibrosis in 13.66% post covid-19 pneumonia cases.[17]

4.8% of patients admitted to the AL shifa center had neurologic manifestations (CVA), which was rare but significant complications, associated with a high risk for death. I found that all patients who had stroke dead.

In *study by Li Y , Li M , Wang M , et al .* Found that patients with COVID-19, (4.6%) developed acute ischaemic stroke and 1 (0.5%) had intracerebral haemorrhage.[18]

*Cohort study by Maxime Taquet et al.* had estimated incidences of 0.56% for intracranial haemorrhage, 2.10% for ischaemic stroke.[19]



Depression estimated in 6 patients (4.8%). Prevalence of depression in study by Yeen Huang *et al.*, 2020. of 7,236 patients about 20.1%. [20]

Another complications found in this study was Shock 4.8%. In study by Steven Fox, MD, Rishik Vashisht, MD, Matthew Siuba, DO and Siddharth Dugar, MD. Shock is common in critically ill patients with COVID-19, developing in 5% to 10% overall. [21]

In study by Wu Z, McGoogan JM. 2020 . Critical disease (i.e. septic shock, and/or multiple organ dysfunction) has been reported in approximately 5% of the symptomatic patients.[22]

preterm birth 0.8%. retrospective cohort study in California revealed that PTB rate among COVID-19 diagnosed birthing people was 11.8% compared with 8.7% among those without a recorded COVID-19 diagnosis.[23]

and encephalopathy 0.8%. In study by Vishank Arun Shah *et al.* Of 12,601 hospitalized COVID-19 patients, 1092 (8.7%) developed acute encephalopathy.[24]

## Conclusion

1. Most of critical patients were old age group.
2. Majority of studied patients had long-term sequelae.
3. There's a significant association in disease severity and Co-morbidities (Hypertension, diabetes mellitus, and cardiovascular diseases were the prevalent chronic diseases.

4. Increase levels of D-dimer was associated with the disease severity.

5. The blood urea nitrogen and serum creatinine among critical group were associated with disease severity.

#### Recommendation

- A clear understanding of post complications of the disease will allow physicians and governments to draw guidelines to support patients who survived COVID-19.
- More research, time, and health education are required to better understand and recognize the post-COVID complications in diverse populations and settings; and hopefully, will eventually allow us to understand the long-term effects of the infection.

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