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EPIDEMIOLOGICAL STUDY TO FIND THE IMPACT OF COVID_19 IN TREATMENT OF THALASSEMIA PATIENTS IN LAHORE

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Abstract:

Introduction: *COVID-19 is a major pandemic that is leading cause of morbidity and mortality in the people in all over the world (Mehta, 2020). The mortality rate of COVID-19 is less but when it diagnosed in the people who are already suffering any disease then there are high chances of death in the patients due to their weak immunity (Bai, 2020). Thalassemia is a disease of red blood cells and immunity of patients is very weak in such patients, thus COVID-19 showed enhanced negative effects on the patients of Thalassemia and other related diseases.*

Objective*: To determine the impact of Covid_19 in treatment of Thalassemia patients*

Study Design:

The observational cross-sectional study by online questionnaire was conducted to find the prevalence of disease and the study was conducted for almost three months from March 2020 to May 2020.

Methodology: *In the cross-sectional study with the help of participants, 150 patients were selected who filled the questionnaire to determine the impact of COVID-19 in the lifestyle of people as well as in the people who are dealing with the Thalassemia. There were almost 30 questions in the questionnaire that were filled by the patients who were suffering with the disease. The purpose of such study was to determine the effect of pandemic in treatment of various diseases especially Thalassemia.*

Results: *The people from Lahore who were diagnosed with COVID-19 were selected for the study and they were advised to fill the questionnaire. The results indicated that the COVID-19 is highly affecting the people of Thalassemia because people are not giving blood for the patients of Thalassemia due to lockdown. Quarantine situation has also affected them and they are avoiding from going outside.*

Conclusion: *The pandemic situation of COVID-19 is creating problem for all developed and developing countries because it is increasing the problems related to disease and economic conditions. The treatment of Thalassemia is only possible when people will donate blood for them but due to quarantine and lockdown situation, the people are not participating in giving blood.*

PTMC for mitral stenosis is a safe procedure for severe MS. PTMC is associated with minimal valve related and neurologic complications.

Key Words*: COVID-19, Thalassemia, Red Blood Cells, SARS-CoV, hemoglobinopathies, sickle cell anemia.*

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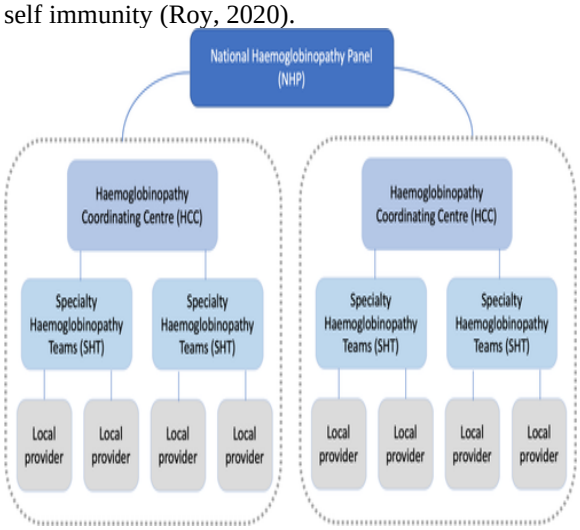
INTRODUCTION:

COVID-19 is a leading cause of morbidity and mortality nowadays because this pandemic has affected all the countries of the world that has just started from Wuhan, a city of China (Zheng, 2020). The study investigates that the causative agents of corona virus in mostly people is novel severe acute respiratory syndrome corona virus 2 that is creating a global health problem. The virus can be transmitted from human to other human after close contact (Yen, 2020). Furthermore, the virus spread from sneezing and coughing of infected person, therefore, it has been advised to keep corona positive patients in incubation for 14 days to limit the transmission of disease (Tahe, 2020). The increase rate of disease is associated with other co-morbidities because other diseases affect the immune system of people due to which the chances of high immunity and increased health are less. The healthcare professionals have identified that such patients who are already suffering with disease should be well cares and treated to increase their self immunity (Roy, 2020).



Haemoglobinopathy and teams for the care of patients dealing with this disease in COVID-19

The morbidity rate of disease is very high while on the other hand the mortality rate is very low but the study has found that COVID-19 showed severe effects on the patients who are suffering from hemoglobin disorders (Motta, 2020). These disorders include Thalassemia and sickle cell disease, both are red blood cells related diseases. The centers of Disease Control and Prevention do not indicate any particular indications for the patients who are suffering from hemoglobinopathies (WHO, 2020). It can be found from the studies that immediate spread of corona virus can leave such patients fragile when they fight from the infection (Cascella, 2020). Hematological condition such as SCD along with functional asplenia, puts the patients into the risk to develop various acute pulmonary complication such as Viral Infection most probably Thalassemia (Rothan, 2020).

Literature Review

A study was conducted by Hussain et al to find the risk of viral infection on patients of SCD series. The study gathered the data from almost 50 patients who were confirmed COVID-19 positive (A.Rothan, 2020). The study determined that 4 out of 50 people were already suffering with SCD. The study indicated that these cases of corona virus were came in emergency department due to vaso-occlusive crisis while the clinical course of SARS-CoV-2 infection was mild at that time (iEngD, 2020). But the clinical history of patients showed that those patients were dealing with various respiratory complications e.g. asthma, acute chest syndrome, and pulmonary embolism. All these respiratory diseases are the risk factors for development of COVID-19 as it is an pulmonary disease. The clinical experience with Thalassemia patients has indicated that the mortality rate of COVID-19 is higher in Thalassemia due to weak immunity. Furthermore, it was also mentioned in the study that healthcare professional should took special care of the patients of Thalassemia due to enhanced mortality rate in them due to SARS-CoV-2 (Dong, 2020).

It is essential to find the clinical manifestations suggestive to find the progress rate of ACS such as Thalassemia, hepatic dysfunction, multi-organ failure, acute kidney injury, and thrombocytopenia. It is the moral responsibility of the healthcare professionals to analyze the difference between ACS and other types of pneumonia as well as more diffuse ground glass appearance which is highly linked with infection by SARS-CoV-2 infection (Bavishi, 2020).

The healthcare professionals should take some cautions for increase pressure of pulmonary system and the right heart failure due to hypertension because it enhanced the risk of complication of infection due to SARS-CoV-2 infection. Cardiac as well as pulmonary specialists should consulted the patients of pulmonary hypertension. Thus, it is essential for the health care professionals to find the high risk of sepsis in SCD patients whose functional hyposplenism make them vulnerable to various bacterial infection (MD, 2020).

After the development and recognization of pandemic of COVID-19, the population and healthcare professionals of all countries are bound to follow the guidelines of WHO because there is no vaccine or medicine for the treatment of fever and respiratory disease. The research indicated that the risk of development of respiratory disease as well as mortality rate is higher in patients of Thalassemia, other types of anemia and sickle cell disease (Bartlett, 2020).

Various other diseases also increase the risk of COVID-19 in patients such as diseases include Diamond–Blackfan anaemia (DBA), thalassaemia, SCD, sideroblastic anaemia, pyruvate kinase deficiency, and congenital dyserythropoietic anaemia (CDA). The authors found that the reason of higher risk of disease in such patients is due to weak immune system of the patients and it has been cleared from the study that immune system plays important role in fighting the disease caused by any viral infection (Gupta, 2020). The rate of disease can be reduced by gathering accurate information about preventive measure of disease because if this disease will not be controlled than there are high chances of death in all over the world (Grech, 2020).

Objective

The purpose of the study was to determine the impact of Covid_19 in treatment of Thalassemia patients because the pandemic situation of COVID-19 has affected the various fields of regular work especially medical field.

METHODOLOGY:

STUDY DESIGN:

Cross Sectional Study

SETTING:

THQ Lahore

STUDY DURATION:

3 Months.

SAMPLING TECHNIQUE:

Online Questionnaire

SAMPLE SIZE:

150

INCLUSION CRITERIA:

- Men and Women of ages from 20 to 60 who were diagnosed with Thalassemia
- People having both professional and un-professional life and various nature of job
- Kids who were busy in their treatment by getting blood from outside source to enhanced the immune system
- General people belongs to different areas of country such as urban and rural
- People who are taking medication for treatment of Thalassemia
- Patients who were recently diagnosed with the COVID-19 positive.

EXCLUSION CRITERIA:

- People who are not taking any precaution or medication
- Patients with an co-morbidity of any other unrelated disease such as diabetes and blood pressure
- People who were not diagnosed with COVID-19
- People who have been recovered from the disease

Statistical Tool

SPSS version 19

Chi-square test

ETHICALCONSIDERATION

- Written informed consent was taken from all the patients.
- The subject was informed there are no disadvantages or risk on the procedure of study.
- Data will be saved in personal laptop and hard copies from data will be in locker.
- All informed and collected data will be kept confidential.
- Participants will remain anonymous throughout the study
- They were also informed that they are free to withdraw at any time during the process of the study

DATA COLLECTION

- Data collection sheets were utilized to collect the data.
- The data was gathered according to the variable of gender, qualification, awareness and age
- The demographic data was collected from all the patients.
- The patients who were unable to fill the performa, the data was collected from their relatives.

DATA ANALYSIS

- Appropriate statistical technique for collection of data as well as for data analysis was used with SPSS version
- Chi-Square test was pragmatic in statistical P-value<0.05 is analyzed.

RESULTS:

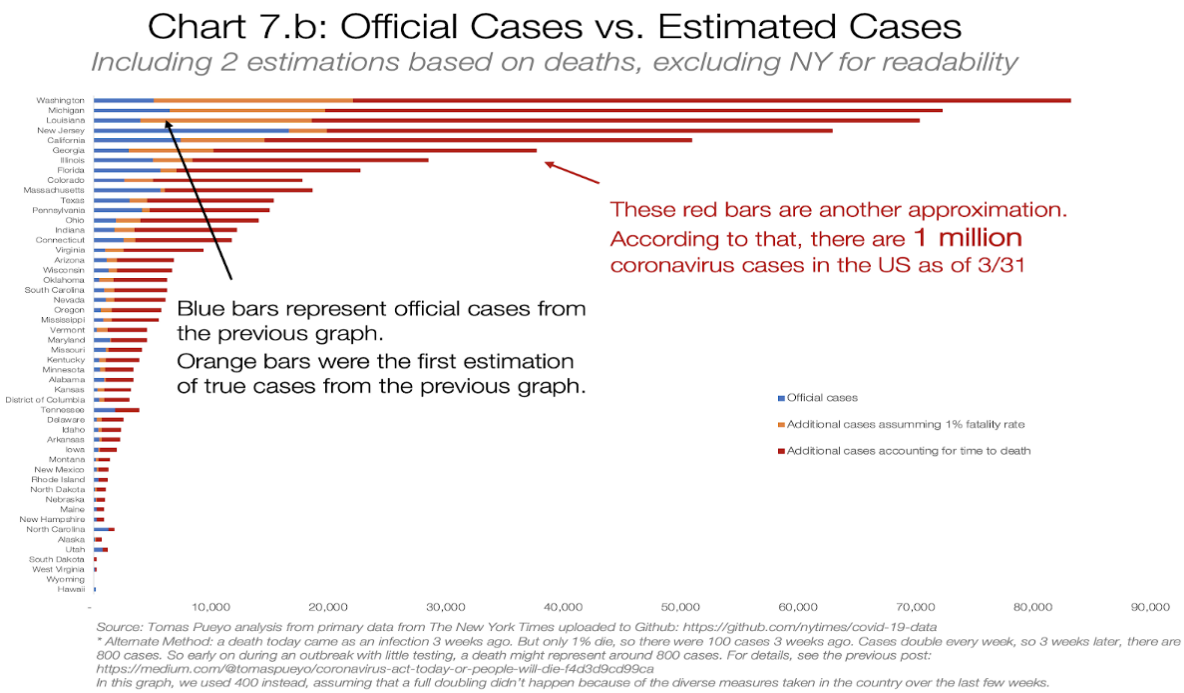
From 150 patients who were having co-morbidities such as Thalassemia and COVID-19 were especially kids because the immune system of kids is very weak as compared to adults.

The results also indicated that the increase risk of death of Thalassemia patients is due to lockdown and quarantine situation because due to lockdown people are unable to visit hospitals to donate their blood for the Thalassemia patients.

The results also indicated that the number of patients was higher in developed countries because the people in developed countries are taking high precautions than people of developing countries.

The results showed that the numbers of patient are increasing day by day and situation is going towards worse condition because economic system of all the world is also being disturbed.

	Morbidity rate	Mortality rate	Reason
Thalassemia	70%	40%	Lack of blood due to lockdown
Sickle cell anemia	60%	50%	Weak immune system
Sideroblastic anaemia	70%	30%	Weak immune system



DISCUSSION:

The results showed that corona virus is a most pandemic situation and is leading cause of many problems. The treatment of Thalassemia is also being suffered due to corona virus. The results showed that the mortality rate of disease is less but a large number of death occurred due to COVID-19 positive of Thalassemia patients. The results were similar to the study conducted by Hussin in which it was described that no doubt the rate of mortality and morbidity is high in patients but mortality is much higher in patients who are dealing with already any other disease especially such diseases that are decreasing the immune system of person.

Furthermore, the result found that the severity of disease is depend on the immune system of people as when the immune system become weak, the recovery time is difficult. Thus, Thalassemia is being highly affected by the COVID-19 pandemic because there is no any vaccine or medicine available for the disease. People can only fight from virus by their own immune system that is unable for Thalassemia patients.

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