



STUDY OF INFLAMMATORY MARKERS AND HEPATIC ENZYMES IN COVID PATIENTS.

Biochemistry

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ABSTRACT

Covid 19 (coronavirus disease) is an infection disease caused by newly discovered coronavirus. Its Pandemic start from 2019. Firstly it was observed in wuhan china WHO declared corona a pandemic on 11.3.2020 Diabetes mellits, immune compressive Patients, Hypertension, elderly people etc are at risk factors for covid-19. Assessment and monitoring of some inflammatory markers and hepatic enzymes are important for treatment, prognosis and clinical assessment of Covid-19. CRP Production is induced by Cytokines and tissue destruction. Inflammatory response triggered by rapid viral replication of SARS covid 2 and cellular destruction can recruit macrophages & monocyte and induce the release of cytokines and chemokine. **Objective :-** Measurement of C-reactive proteins, (Crp), Ferritin and Hepatic enzymes (SGOT, SGPT) in covid-19 patients. **Material and method :-** This was hospital bases study, conducted on 50, covid- 19 (RTPCR+ve) patient, Opd and ipd, from march 2021 to August 2021 ferritin done by quantitative turbidometric method. SGOT, SGPT done by kinetic Method CRP done by quantitative turbidometric method. Investigation done on 640 fully autoanalyser (Transasia) **Result :-** in this study, we observed there is increase levels of Crp, ferritin and hepatic enzymes in covid-19 Patients. Higher levels of these parameters indicate the severity of disease. Hepatic enzymes increase because it might related to virus replication in liver. Crp production in induced by cytokines & tissue destruction. Macrophage which produce cytokines & account for the majority of immune cells in lung paranachyma might be responsible for secretion of serum ferritin.

KEYWORDS

crp, ferritin, covid-19

INTRODUCTION :-

Crp stands for C-reactive Protein that is widely know as genuine indicator of inflammation. Every time our body faces any kind of inflammation. The crp levels increase in the blood and this is exactly how the presence of any kind of inflammation can be detected. Crp increase because of overproduction of inflammatory cytokines Cytokines fight as against the pathogen but when system hyperactivates it can damage living tissue.

Crp Production is induced by cytokines and the tissue destruction crp concentration reach about severity of illness.

Crp begins to rise within 4-6 hours after the onset of inflammation and peaks within 36-50 hours. Crp has half life of 4-7 hours therefore serum level are a means of active inflammation (1)

Sr. Fermitn is a key mediator of immune dysregulation, especially under extreme hyperferritinemia via direct immune Suppressive and effect contribution proinflammatory to the cytokine storm.(2)

Coronavirus 2 (SARS Cov2) develop the disease covid -19 which can cause sever pneumonia and damage the liver, heart and kidneys. (2) The inflammatory cytokine storm has been recognize as Primary cause of death, which is define by excessives and uncontrolled release of proinflammatory cytokines as has been reported in other infection caused by pathogenic coronaviruse. for instance inflammatory cytokines relased by macrophages (IN-6, IL-10 TNF) increase in patients with sever covid -19 disease, resulting in damage to the lungs & other organs. (3) Consequently meserment of plasma inflammatory markers could be useful for predicting the disease progress.

METHOD AND STUDY :-

From march 2021 to August 2021, 20 to 80 years are covid the patient were studied at GMC chandrapur.

We asses SGOT, SGPT markers and inflammatory markets like crp ad Ferritin SGOT, SGPT done by kinetic Method CRP & ferritin done by quantitative turbidometric method. Investigation done on 640 fully autoanalyser (Transasia)

RESULT :-

in this study, we observed there is increase levels of Crp, ferritin and hepatic enzymes in covid-19 Patients. Higher levels of these parameters indicate the severity of disease. Hepatic enzymes increase because it might related to virus replication in liver crp production in induced by cytokines & tissue destruction. Macrophage which

produce cytokines & account for the majority of immune cells in lung paranachyma might be responsible for secretion of serum ferritin. In our study Sr. Ferritin is more than 500 g/dl in in some but in 20% of pt. ferritin is normal.

Parameter	Values	Significant value
SGOT	Majority of Patients, values increase than normal values	> 100 IU in 10 patient out of 50 Patients
SGPT	Majority of Patients, values increase than normal value	> 100 IU in 11 patient out of 50 Patients
Crp	Majority of Patients, values increase than normal value	> 50 mg/L in 23 patient out 50 of Patients
Ferritin	Approximately 50% of patient have more than normal value	> 500 g/dl in 9 patient out of 35 Patients

DISCUSSION :-

In Our study many patient have increase level of hepatic enzyme SGOT/SGPT.

We found that most of patients with SARS-Cov2 have abnormal hepatic enzyme activities and that is might related to virus replication in liver. (4)

Acute ferritin production during the course of inflammatory disease can occur. Macrophage which produce cytokines and account for the majority of immune cells in the lung paranchyma, might be responsible for secretion of serum ferritin. (5) Moreover ferritin synthesis can be induced by several inflammatory stimuli including cytokines such as IL 6.(5) Crp Production is induced by cytokines and the tissue destruction Crp concentration reach about severity of illness. Higher concentration of crp indicate more sever disease which linked to lung damage and worse prognosis (3-5)

CONCLUSION :-

In this study we observed that, the hepatic markers like SGOT SGPT, inflammatory marker crp, ferritin is significantly increase in covid patients, this indicate that in covid disease, inflammation significantly increase, Crp ferriting levels very high, cytokine storm is also seen. The hepatic enzymes increase because it might related to virus replication in liver. Microphage are responsible for secretion of ferritin. Crp Production is induced by cytokines and the tissue destruction Crp concentration reach about severity of illness. This values are helpful in assessment of severity of disease and monitoring of patients.

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