



ROLE OF DRUG METHYLPREDNISOLONE IN TREATMENT OF COVID -19

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ABSTRACT

Present study about different doses of Methylprednisolone used to treat Covid patients from different areas. This study going to about history, reaction, mechanism, UV, IR, NMR data collection as well as different , doses of steroids methylprednisolone drug concentration and study how and which doses of steroids methylprednisolone is benefiting the Covid-19 patients.

KEY WORDS: Covid -19, RTPCR, Methylprednisolone,UV IR ,NMR.

INTRODUCTION

21st century is called as scientifically and technologically advanced century, when various innovative inventions have facilitated to make human life easier and happier. Such a inventions are good as well as bad for the growth of human in the present world. During the experiment for new invention in China city named, Wuhan in November 2019, the Novel Corona Virus named virus was initially noticed. The virus is being spread all over the world within the short span of time and the world is disturbed. The Corona virus cannot be controlled. The virus entered in India in January 2020, Indian government also didn't have an idea either to control or to cure the COVID-19. To control the outbreak of the covid-19 disease Indian government has declared "Lock down theory" in India from 22nd March, 2020.

In beginning of the outbreak of this global Pandemic Government was unaware about the symptoms of the virus, How to cure the disease? How the person can get infected? And How to deal with the virus infected patients?

The Symptoms of the COVID-19 are:

- | | | |
|-------------------------|--|---------------------|
| a. Fever | b. Cough with or without Expectoration | c. Fatigue |
| d. Shortness of Breath | e. Loss of appetite | f. Myalgia |
| g. Sore Throat | h. Nasal Congestion | i. Malaise |
| j. Headache | k. Loss of smell | l. Loss of taste |
| m. Diarrhea | n. Swelling of eyes | o. Watering of eyes |
| p. Generalised weakness | q. Chest pain | |

The patient having above symptoms has to undergo the (A) Rapid Antigen Test (B) RTPCR Test. If the results of the test is positive, then the patients will be Primarily isolated and as per status and condition of patient, treatment as per protocol, should have to be initiated. If the test is negative but any of home members is positive then he or she will be home quarantine depending upon severity and HRCT scan score which is also important for monitoring of patients.

Corona disease was detected for first time in China in November 2019. None of the country knew the cure for the disease. By April 2020, the disease had spread to almost every country in the world. Various scientists have suggested different drugs and their action. Different scientists have written about how these new drugs are useful for corona virus disease. To observe the infection of COVID-19, there are two kinds of tests: (A) Rapid Antigen Test (B) RTPCR Test. If the test results in Positive, the patient is called as the COVID-19 virus



infected. In Covid-19 disease, Corona virus mostly affect the respiratory system of infected person causing pneumonia.

In such a circumstances World Health Organization or physician is implementing and experimenting various medicine or drug to cure the infected one. They found some medicines that help to cure the virus.

The medicine or drug on Cancer, AIDS, critical diseases, malaria, Typhoid, gastro etc. were used to treat Covid-19. These medicines can have some side effects on the patients.

If the test is positive then the patient is treated with following medicines or drugs, with necessarily Oxygen supply as per need,

Oral Treatment protocol	Intravenous Treatment protocol
Antiviral Tablet Favipiravir	O2 therapy Nasal O2, High Flow Nasal cannula 1 ventilator
Antibiotics- Macrolide group	Antibiotics- Macrolide group Including 3 rd generation cephalosporin
Tetracycline	Antiviral injection Remdesivir
B complex-zinc, Vit – c, Vit – D	IV antacids
Antiplatelets- aspirin	Injection Steroids Methyl prednisolone
Montelukas	Injection steroid dexamethasone
Ranitidine, Pantoprazole	Anti Coagulant low moleclar- weight heparin
Parecetamol	Inj carbapenem
Oral Monoclonal Antibodies	Intravenous monoclonal antibodies
	Third generation Cephalosporin

The above discussed medicines or drug are given to the symptomatic positive patients. These medicines are used all over the world with different brands of companies and different types of contents. As Covid infections is caused due to Novel Coronavirus it is, considered as viral infection. In this situation most of anti-viral medicines were tried for recovery of Covid Patients. Among of many life saving drugs available for the treatment of covid19 worldwide Methylprednisolone Drug is found to be most useful for treating the covid confirmed or suspected patients. Some of the medicines are banned for the children under 15 years of age. These kind of all drugs which are presently being utilised is going to be studied in the present research. All kinds of drugs which are given COVID-19 infected patients will be studied systematically. The research makes investigatory analysis of various impacts, effects and side effects of these drugs on patients statistically. All these drugs have some effects but this research is based only on the study of steroid methylprednisolone drug. Methylprednisolone is used to treat conditions such as arthritis, blood disorders, severe allergic reactions, certain cancers, eye conditions, skin, kidney, intestinal, lung diseases, and auto immune system disorders. It decreases immune system's response to various diseases to reduce symptoms such as swelling, pain, and allergic-type reactions. This medication is a corticosteroid hormone. Methylprednisolone may also be used with other medications in hormone disorders.

As per discussion with doctors and patients once the patient is treated with the steroid methylprednisolone along with other medicine. The patient can get cures the COVID-19 but the following side effects are being observed in the patient,

- Generalised swelling all over body
- Increase in blood pressure
- Septicaemia
- Fluid retention
- Thrombosis
- Mucormycosis
- Facial puffiness
- Hyperglycaemia
- Decrease in immunity
- Epigastric Pain
- Opportunistic infection
- Bone fracture in prolong doses etc.

Thus, the present research is an attempt to make an investigatory analysis of various impacts, effects and side effects of different doses steroids methylprednisolone drugs on human being. There are so many medicines used on Covid-19 but in this research project researcher is going to study the only about steroids methylprednisolone medicines or drugs and doses.

OBJECTIVES OF STUDY

1. To study the efficacy of Methylprednisolone drug in treatment of Covid-19.
2. To study impact of different doses of Methylprednisolone drugs in covid-19.



3. To study the combination of drug therapy use along with Methylprednisolone drugs which could be used in Covid-19.
4. To study long term effects of Methylprednisolone therapy in patient.
5. To study the test used in detection of effect of Methylprednisolone on patient, eg. Blood test, urine test, albumin test, sodium potassium test etc.

RESEARCH METHODOLOGY

Data for this research paper will collect through secondary sources.

A. Literature survey

- Ref. books
- Journals
- E library
- Gove. GR reloaded during covid-19 pandemic

RESULT AND DISCUSSION

Role of Drug Methylprednisolone treatment in Covid -19:- Methylprednisolone (Depo-Medrol, Medrol, Solu-Medrol) is a synthetic glucocorticoid, primarily prescribed for its anti-inflammatory and immunosuppressive effects. It is either used at low doses for chronic illnesses or used concomitantly at high doses during acute flares. Methylprednisolone and its derivatives can be administered orally or parentally

Regardless of route of administration, methylprednisolone integrates systemically as exhibited by its effectiveness to quickly reduce inflammation during acute flares. It is associated with many adverse reactions that require tapering off the drug as soon as the disease is under control. Serious side effects include iatrogenic Cushing's Syndrome, hypertension, osteoporosis, diabetes, infection, and skin atrophy.

Chemically, methylprednisolone is a synthetic pregnane steroid hormone derived from hydrocortisone and prednisolone. It belongs to a class of synthetic glucocorticoids and more generally, corticosteroids. It acts as a mineralocorticoid and glucocorticoid receptor agonist. In comparison to other exogenous glucocorticoids, methylprednisolone has a higher affinity to glucocorticoid receptors than to mineralocorticoid receptors.

How its affected on various treatments which is as follows :

- a) **Cough with or without Expectoration** :- As steroidal property, because of Bronchodilation action cough and Airway passage. Anti-inflammatory action oedema on Bronchioli.
- b) **Fatigue** :- As a suppresses immune system, and strain.
- c) **Shortness of Breath** :- Bronchoconstriction and Anti-inflammatory action Airway passage, space for Airway
- d) **Loss of appetite** :- As a suppresses immune system, and strain.
- e) **Myalgia** :- Due to Anti-inflammatory action it reduces myalgia.
- f) **Loss of smell** :- Antifungal create new olfactory cell tissue grow.
- g) **Loss of taste** :- affected on smell and taste centre boost.

CONCLUSION

The overdose of Methylprednisolone drug affect humans those have low immunity, but in emergency period this drug act as life saving for several patients as per report of consultants.

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