Evaluation of Prescription pattern used in the Treatment of COVID 19 Patient's

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Abstract: - To study the prescription pattern and efficacy of different categories of drugs used in the treatment of COVID-19 patients. Hundred prescriptions of COVID-19 patients were collected from the different hospitals of Belgaum. The most common prescribed drug in COVID-19 patients was found to be Pantoprazole (93%), Amoxicillin (89%), Cefotaxime (88%), Paracetamol (85%), Dexamethasone (44%), Favipiravir (77%), Vitamin-C (71%), Azithromycin (70%), Omeprazole (64%), Multivitamin (60%), Aspirin (59%), Zinc (56%), Doxycycline (45%), Deriphyllin (45%), Ivermectin (39%), and Clopidogrel (30%). In present study, the role of prescription was observed to treat COVID-19 patients, in which several drugs were used in the treatment of COVID-19 patients.

Key Words: —*Coronavirus disease, Prescription, Antiulcer, Antipyretics and Multivitamin.*

I. INTRODUCTION

In December 2019, a sequence of acute atypical respiratory disease arisen in China (Wuhan). This rapidly spread from Wuhan to other areas. Later it was discovered that a novel Coronavirus was responsible for atypical respiration. The novel Coronavirus was named as severe acute respiratory syndrome coronavirus-2 for to its high homology to SARS-CoV, which caused acute respiratory distress syndrome (ARDS) and high mortality during 2002–2003 [1-5]. The disease was mainly spread through inhaled drops when coughing, sneezing, or even when talking to infected people, Coronaviruses are known to have mutated and can also lead to respiratory, enteric, hepatic, and neurologic diseases [6]. WHO also had recommended at community level, people to avoid crowded areas and postpone non-essential travel to places with ongoing transmission, hygiene by coughing in sleeve/ tissue rather than hands and practice hand hygiene frequently?

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Studies confirmed, in India WHO declared COVID-19 outbreak to take immediate actions and scale up response to treat, detect and reduce transmission to save people's lives. Therefore, different drugs of drugs were preferred to save life to some extent [7]. The drugs which were mainly used were Glucocorticoids, Remdesivir, Chloroquine and, Lopinavir-ritonavir, Baraticinib, Non-steroidal anti- inflammatory drugs, Angiotensin converting enzyme-2, hydroxychloroquine and Tocilizumab in combination with Azithromycin. However, these drugs are not free from side effects, where short term usage can cause long term effect. Among the most serious adverse effects are cardiac side-effects such as atrioventricular block, bundle branch block, cardiac arrhythmia, cardiac failure, cardiomyopathy, electrocardiographic (ECG) changes, hypotension, ventricular fibrillation and ventricular tachycardia [8-10].

Thus, it becomes challenging to categorize different drugs used in treating Covid 19. Therefore, prescription is used as a medical tool to dispense selective drug therapy [11]. Hence the current studies demonstrate the role of prescriptions to study the effect of several drugs in the treatment of COVID – 19.

II. METHODOLOGY

Hundred prescriptions of COVID-19 patients were collected from the different hospitals of Belgaum. All 100 Prescriptions were screened to identify different category of drugs used in the treatment of COVID-19, later it was analyzed such as antibiotic, antacids, antiulcer, and multivitamin were preferred choice of drugs. Thes results were represented through bar graphs for proper analysis of results.

III. RESULTS

This narrative review summarizes current evidence regarding major proposed treatments on COVID-19 and provides a summary of current clinical experience and treatment guidance for this novel epidemic Coronavirus.

Total of 100 prescriptions were collected and analyzed. The most common drugs prescribed were Pantoprazole (93%), Amoxicillin (89%), Cefotaxime (88%), Paracetmol (85%), by Dexamethasone (84%) Favipiravir (77%), vitamin- c(71%), Azithromycin 70%), followed by Omeprazole(64%), Multivitamin(60%), Aspirin(59%), zinc(56%), Doxycycline(45%), Deriphyllin (45%), Ivermectin (39%), Clopidogrel (30%). Fig 1 depicts the data.

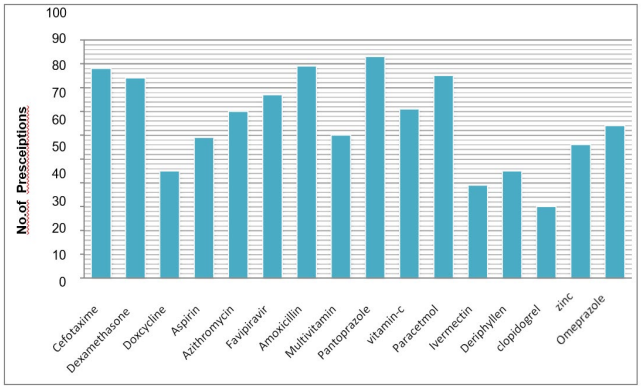

Fig.1. Most common prescribed drugs

3.1 Effect of Antibiotic Drugs used in Treatment of COVID-19

The most common antiboitic drugs prescribed were Amoxicilline (89%), followed by Cefotaxime (88%), Azithromycin (70%), Doxycycline (45%), and Ivermectin (39%). Amoxicilline was most prescribed antibiotic among the following. Fig: 2. depicts the data

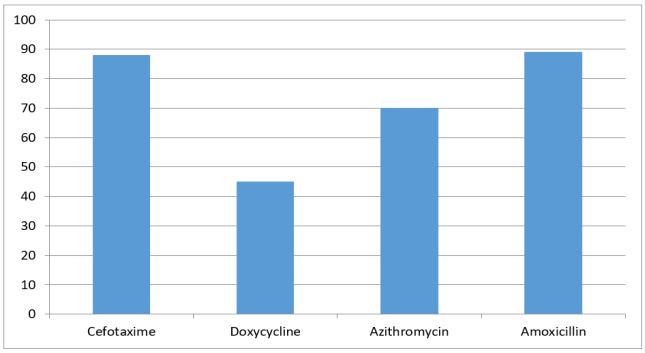

Fig.2. Effect of Antibiotic Drugs used in Treatment of COVID-19

3.2 Effect of Multivitamin Drugs used in Treatment of COVID-19

The most common multivitamin brand prescribed were vitamin- C (71%) along with Multivitamin (60%) and zinc (56%). Vitamin C is most commonly used compared to other multivitamins. Fig: 3. depicts the data

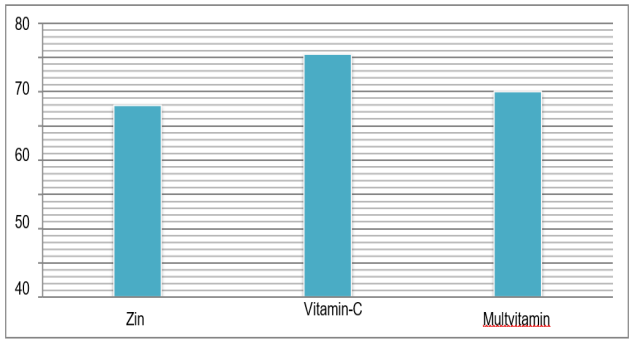

Fig.3. Effect of Multivitamin Drugs used in Treatment of COVID-19

3.3 Effect of Antiviral drugs used in Treatment of COVID-19

The Most Common Anti-Viral drugs as per prescription were Favipiravir (77%). and Ivermectin (39%). Favipiravir makes almost 75% of total prescription, Fig: 3. depicts the data

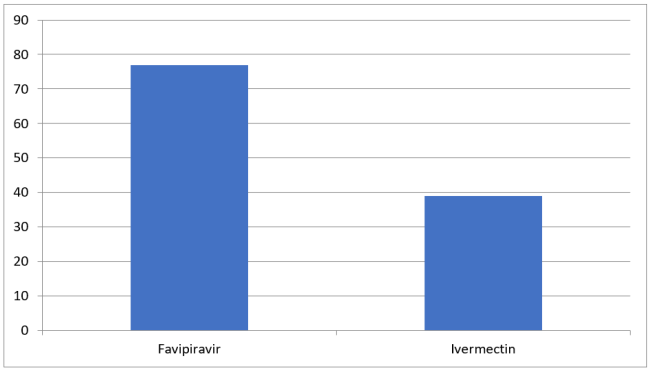

Fig.4. Effect of Antiviral Drugs used in Treatment of COVID-19

3.4 Effect of Anti-ulcer Drugs used in Treatment of COVID-19

The Most Common Antiulcer Drugs Prescribed were Pantoprazole (93%) along with Omeprazole (64%). As per current studies, Pantoprazole was most commonly used drug while treating Covid 19. Fig: 4. depicts the data

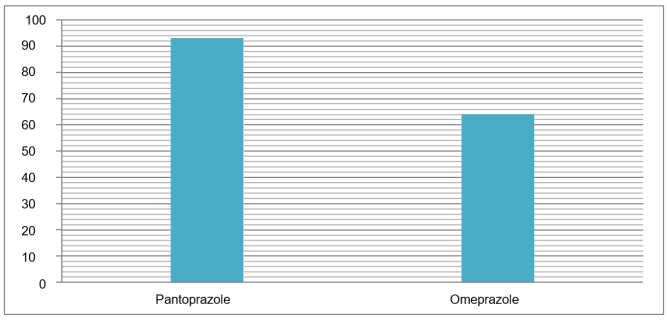

Fig.5. Effect of Anti-ulcer Drugs used in Treatment of COVID-19

IV. DISCUSSION

Coronavirus disease 2019 (COVID-19) is an infectious disease which is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Coronavirus disease 2019 (COVID-19) is chronic, inflammatory. Even thought, the exact mechanisms of COVID-19 have not been yet discovered some drugs are found needy for its treatment. These drugs which are divided into some therapies, have demonstrated to be helpful for COVID-19 patients. [12-20]. There are some drugs reported that can be helpful for COVID-10, different kinds of drugs were used to improve the disease. Each of these drugs do have its own efficacy and indication of usage but the important issue is that many patients were challenged by different AEs during treatment. Alongside, many beneficial effects of these drugs it's not completely safe. Some adverse effects (AE) have been reported of patients suffering from COVID-19. [21-25]

Our findings emphasize, that various antibiotics such as azithromycin, doxycycline, ceftriaxone, amoxicillin were recommended for use in the management of COVID-19, i.e., asymptomatic, mild, moderate, and severe COVID-19 with/without complications. Most of the guidelines do recommend therapy with antibiotics. The WHO recommended that antibiotic therapy or prophylaxis should not be used in patients with mild/moderate COVID-19 unless it is justifiable [26]. As per various reports, it is observed that the mechanism of azithromycin and Dexamethasone are mainly used due to its anti-inflammatory and immunosuppressive effects, through inhibition of inflammatory cells and suppression of expression of inflammatory mediators [27, 28]. Even thought, Amantadine is an antiviral drug is preferred to treat influenza A, due to its antiviral properties, it can reduce the symptoms of coronavirus. [29,30] Interestingly, according to our findings, some countries still recommended the use of antibiotics in the management of mild COVID-19.

Our current study revealed that antiviral drugs such as Ivermectin and Favipiravir was prescribed for Covid 19 treatment. Studies revealed that it acts as an inhibitor of RNA dependent RNA polymerase and its characteristics and pharmacokinetics have been studied in MERS-CoV and SARS-CoV infections. This drug causes decline in the replication of viral genome and its production due to the alterations in the viral exonuclease function and disturbed proof reading. It can be recommended to prevent the disease progression severity in COVID-19 patients since it prevents the replication of the virus [31].

Etminan M et al. reports, antipyretics such as acetaminophen Paracetamol can interfere with the communication between the innate and adaptive immune system in lymphatic tissue, which occurs within hours of antigen administration [32]. Most common prescribed drug was found to be Pantoprazole (93%), and lowest prescribed drug was Clopidogrel (30%) as per current studies, which are found to possess antiulcer activity by suppressing SARS-CoV-2 replication and reduce viral loads by 100-fold in both the upper and lower respiratory tracts, and to mitigate virus-associated pneumonia. However, immunity and severity of patients is improved by usage of multivitamin drugs [33]. Even though varied category of drugs was used to treat Covid19, it's not free from side effects. According to the finding's obtained, dizziness, headache and thrombocytopenia are the most common diseases due to multiple use of drugs. There have been some attempts to use some of these drugs in combination. However, using more than one drug together may cause serious side effects on patients. Therefore, detecting and dealing with drug-drug interactions, will be of greater challenge in dealing with Covid19 [34].

Similarly, it is necessity to identify other categories of drugs that can modulate receptors treating COVID- 19, which is the future scope of present study.

V. CONCLUSION

In present study, the role of prescriptions was observed to treat COVID-19 patient, in which several drugs were used in the treatment of COVID-19 patients. However, researchers suggested that there is no probable novel drug which can treat COVID-19. currently, hence further studies

need to be conducted to identify different categories of drugs which may be used to treatment of COVID-19.

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Conflict Of Interest:

The authors declare no conflict of interest

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