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**Welcome to Eurasian Journal of Comprehensive Clinical Medicine and Translational Research!!!**

## **Piroxicam - Savior in Pandemic**

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The ongoing pandemic of Corona Virus Disease-2019(COVID-19) has leads to repositioning of many drugs. It ranges from antibiotics like azithromycin and Doxycycline to antivirals like Flavipiravir and Ramdesivir, anti-helminthic drugs like Ivermectin. [1] Earlier WHO has warned about the use of non steroidal anti Inflammatory drugs(NSAID) in COVID-19 however, recently the WHO in its modified statement amended the stance like with corticosteroids.[2][3] Many of these repositioned drugs are serving to control the pandemic however, considering the population and healthcare infra- structure present in India , it is certainly difficult to contain and manage the pandemic. Moreover, Indian health agencies are already on persistent strain due to epidemic, endemic diseases and COVID-19 pandemic has put significant strain on the it.

Though many of COVID-19 patients do not need admission and oxygen support, the 2<sup>nd</sup> wave of COVID-19 pandemic has caused significant morbidity and India is reaching daily toll of more than 300 thousand of patient each day with significant mortality pan India.[4] In its recent treatment guidelines released by All India Institute of Medical Sciences, Delhi(AIIMS), plasma therapy, Ramdesivir or Tocilizumab was advised only on specific circumstances while corticosteroid therapy was recommended along with other supportive care.[5] In Solidarity trial also Ramdesivir has failed to show any significant effect on overall mortality or duration of hospital stay.[6] In its guidelines issued on 31 March 2021, WHO has recommended use of corticosteroids and advising against recommendation of Ramdesivir. [7]

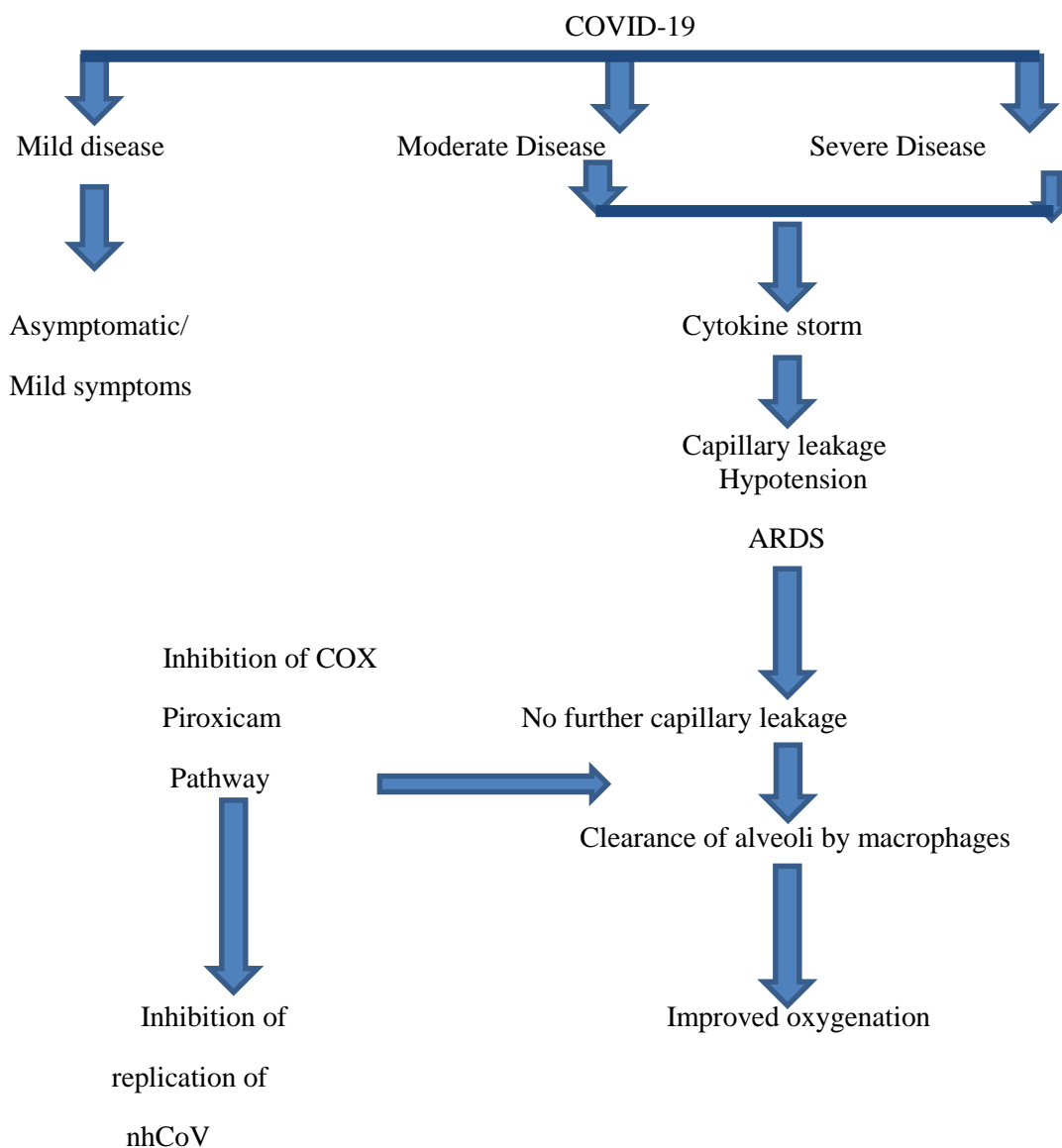
The pathophysiology of COVID-19 reveals the role of cytokine storm and its subsequent consequences leading to Acute Respiratory Distress Syndrome(ARDS) following capillary leakage, hypovolemia, multi organ failure syndrome and death.[8] Combating the cytokine storm can effectively inhibit the post cytokine storm consequences. Hence drugs modulating this storm are of paramount importance in the treatment of the COVID-19.

Piroxicam is one of the non-steroidal anti-inflammatory drug used mainly in inflammatory arthritis.[9] It inhibits prostaglandin synthesis from arachidonic acid by chelating COX-1 (Cyclooxygenase1) and COX-2 inhibitor. Moreover, it is has antiviral activity against NRC-03-nhCoV. [10] It can effectively contain the corona virus induced cytokine storm and consequent septicemia. However, the inhibition of COX pathway

lead to excessive activation of Lipo-oxygenase pathway and inhibition of the gastro-protective prostaglandins and may cause gastric mucosal injuries which can be avoided by concomitant use of Glucocorticosteroids which serve as inhibitor of arachidonic acid metabolism inhibiting the COX and LOX both the pathways.

Lymphopenia is one of the severity indicator in COVID-19 and Piroxicam has shown to induce bone marrow lymphopoiesis moreover, Tumour necrosis factor alpha(TNF- $\alpha$ ),TNF- $\gamma$ , actively involved in the cytokine storm are very well inhibited by Piroxicam.[11-13] So, Piroxicam by several mechanisms can help in combating the cytokine storm and can be used in COVID-19.

## FLOW CHART OF PIROXICAM ACTION



**Abbreviation:** COVID-19: Coronavirus Disease-19; NSAID: Non-steroidal anti-inflammatory disease, ARDS: Acute Respiratory Distress Syndrome, COX- Cyclooxygenase, LOX- Lipooxygenase, nhCoV - Novel Human Corona Virus

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**Consent for publication:** Not applicable

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