DRUG INFO

UNIT FARMASI
HOSPITAL KOTA MARUDU

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FAVIPIRAVIR

INTRODUCTION

Favipiravir is an orally bioavailable antiviral agent that selectively inhibits the RNA polymerase involved in the influenza viral replication. Favipiravir , has been studied in humans initially, for the treatment of influenza and subsequently, for the emerging pathogens which include Ebola and Covid-19.

INDICATION

- To treat cases of influenza that were unresponsive to conventional treatment, as approved in Japan.[2]
- To treat novel viruses including Ebola and Covid-19 which has been investigated in few countries.[1,2,3,4]

DOSAGE AND ADMINISTRATION

- The recommended oral dosing regimen for Favipiravir is:

Day 1 : 1600mg twice daily
Days 2-5 : 600mg twice daily

- Oral administration on an empty stomach.
- The total administration period for adults should be 5 days and should be started promptly after the onset of influenza like symptoms

MODE OF ACTION

- The mechanism of action of favipiravir is novel compared to existing influenza antivirals that primarily prevent entry and exit of the virus from cells.[1]
- The active favipiravir-RTP selectively inhibits RNA polymerase and prevents replication of the viral genome.[5]
- There are several hypotheses as to how favipiravir-RTP interacts with RNA dependent RNA polymerase (RdRp).[1]
- Some studies have shown that when favipiravir-RTP is incorporated into a nascent RNA strand, it prevents RNA strand elongation and viral proliferation.[1]
- Studies have also found that the presence of purine analogs can reduce favipiravir's antiviral activity, suggesting competition between favipiravir-RTP and purine nucleosides for RdRp binding.[1]
- Although favipiravir was originally developed to treat influenza, the RdRp catalytic domain (favipiravir's primary target), is expected to be similar for other RNA viruses.[1]
- This conserved RdRp catalytic domain contributes to favipiravir's broad-spectrum coverage.[1]

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Clinical Evidence

Ebola virus

- When treatment was initiated 2 days prior to infection, favipiravir administered intravenously reduced viremia in a concentration-dependent manner, with an increase in mutagenesis and a reduction of virus infectivity.
-Survival rates of 40% and 60% were observed at doses of 150 and 180 mg/kg BID, respectively. [1]

Influenza Virus

-Favipiravir inhibits 53 types of influenza viruses including seasonal strains A (H1N1), A (H3N2), and influenza B; the A (H1N1)pdm09 pandemic virus; highly pathogenic avian influenza virus A (H5N1) isolated from humans; A (H1N1) and A (H1N2) isolated from swine; and A (H2N2), A (H4N2), and A (H7N2).
-It is also active against drug-resistant strains of the virus, including M2 and NA inhibitors. [2]

Covid-19 Virus

-Shannon et al. found that the SARS-CoV-2–RDRp complex is at least 10-fold more active than any other viral RdRp known.
-Favipiravir acts by inhibiting this viral RdRp enzyme, allowing facile insertion of Favipiravir into viral RNA while sparing human DNA. [3]

Adverse Effects

→Chest pain, hyperuricemia, decreased appetite, diarrhoea, nausea, vomiting, decreased neutrophils, hepatic injury, increased serum transaminase.
→Contraindication: Hypersensitivity to Favipiravir, severe renal or hepatic impairment, pregnancy, breastfeeding.

Warnings and Precautions

1) Concerns related to adverse effects:
→ Hyperuricemia: Use with caution in patients with a history of uric acid metabolism abnormalities

2) Disease related concerns:
→ Gout: Use with caution; may increase uric acid

Monitoring Paramaters

1) Liver function test
2) Full blood count (FBC)
3) Renal profile
4) Uric acid level particulary patient who has gout.

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Editorial board