## ANTISEPTIC ORAL RINSES: WEAPON AGAINST COVID-19 PORW26

**Introduction** The COVID-19 pandemic began in late 2019, causing widespread health concerns. COVID-19 (SARS COV-2) belongs to the corona virus family, which is a group of enveloped RNA viruses with spike protein in its membrane envelope. Other members of this family are SARS COV and MERS COV, which have spread in recent years. Researchers have shown that more than 80% of the COVID-19 genome resembles that of the SARS CoV.

Materials & Method A literature search performed in PubMed, up to 31st July 2021, focusing on SARS-CoV-2, COVID-19, oral cavity and oral rinses. The keywords searched for were "Covid 19 and mouthwash" or "SARS-COV2 and mouthwash" or "Covid 19 and oral rinses" or "SARS-COV2 and oral rinses", and 123 articles surfaced in 2020 and 2021. Inclusion criteria were systematic reviews and reviews; 34 articles formed a part of the poster.

Mechanism Aim To evaluate the composition and mechanism of action of various oral rinses and of action Structure their efficacy to reduce viral load in Covid-19 in published literature. Spike Glycoprotein Potential Mechanisms Of Anti-SARS-CoV-2 **Activity Of Mouth Rinses** -Hemagglutinin-esterase dimer 1. Viral envelope(membrane) disruption - increased permeability, Lipid oxidation Membrane protein 2. Nucleic acid damage -Membrane 3. Inactivation of viral glycoprotein SARS-CoV2 4. Blocking viral attachment via GAGs 5. Blocking the binding of spike proteins to ACE2 receptor Cell Membrane Nucleocapsid proteir and RNA Glycosaminoglycans (GAGs) Envelop protein (eq: heparan sulphate) ACE2 **Methylene blue**<sup>33</sup> Chlorhexidine1,2,3,6,10,11,14,19,21,26,27,29,31 Povidone-iodine1-4,6,10,11,14-Effective antioxidant A bleaching agent Broad spectrum An iodophore Has oxidising properties Broad and as an indicator dye spectrum Broad spectrum Used as urinary tract antiseptic Greatest effect on many gram antimicrobial activity bactericidal agent Peroxide and for neuroinflammation at Used to relieve minor gingivitis the microglial level, oral bacteria, fungi, protozoans mucositis, and as an early Most effective mouthwash and viruses ethanol in addition as an □ Shows affinity for cell and precancerous lesions membranes and delivers solvent Burak et al studied MB as a Acts by increasing cell wall iodine to the cell surface □ Acts by liberating O2, mouthwash for periodontal permeability which further penetrates hence killing obligate therapy and found it superior □ Interacts with fluoride and and causes protein and anaerobes sodium lauryl sulfate of nucleic acid oxidation 3% found effective against □ Three mechanisms of Also effective against SARSadenovirus type 3 and 6, actions: COV, MERS-COV, influenza A adeno-associated virus type 4, 1.Competitively occupy Has more antiviral properties using tooth paste rhinoviruse1A, 1B and type 7 cellular sites Effective than other for

enveloped viruses like influenza parainfluenza, herpes 1, hepatitis B

□ Can inactivate covid and +ve patients.

But studies show it has little

effects: □ Side

(both enveloped and non enveloped) viruses

- Recommended 0.23% for 15 sec
- Side effects: Excess iodine may with thyroid disease

Enveloped viruses can be nactivated by 0.5% H2O2

Also effective against corona virus strains

Corona and influenza viruses are most sensitive (both are vulnerable to oxidation)

phosphorylation 3.Direct or indirect virucidal effect

oxidative processes of cells or

as a potent antiviral agent

Cetyl pyridinium chloride1,3,5,19,21,27 □ Cationic quaternary ammonium compound Antiviral effect against influenza Effective against SARS-COV2 Lysomotrophic action and has ability to destroy viral capsid

Promising alternative to reduce viral load of SARS-CoV-2 Clinical improvement in cases with mild & moderate symptoms Promotes self activation continuous production of ROS in presence of molecular  $O_2$ 

## References

Triphala, curry leaves, neem, tulsi, green tea

## Conclusion

Despite limited clinical evidence, we suggest the use of preprocedural mouthwashes in dental practice to reduce SARS-CoV-2 viral load of saliva while treating the patients during this pandemic.