

Short Communication

Matily herbal drink could be a prophylaxis and therapy against COVID-19: a possibility

John T. Eapen*

MEEISATCODE, Phoenix Hospital, Masoli, Dahanu Road, Palghar District, Maharashtra, India

Received: 09 November 2020

Revised: 10 December 2020

Accepted: 11 December 2020

***Correspondence:**

Dr. John T. Eapen,

E-mail: jeteapen@chaloglobal.com

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ABSTRACT

COVID-19 (SARS-CoV-2) known as coronavirus is a pandemic and a threat to humans the world over. There are no medicines available to kill the virus; we can control only its spread to some extent. Under such conditions, they have suggested the use of surfactant to kill viruses. We propose the use of a herbal concoction with ingredients available in every kitchen. It has not only emulsification and surfactant properties which inactivate the virus but also subsides Gastroesophageal Reflux Disease (GERD) associated with COVID-19 infection with no proton pump inhibitor. This will favour the inactivation of coronavirus by low pH in the gastric region. Thus, Matily Herbal Drink may act as a prophylaxis and treatment for COVID-19.

Keywords: Matily herbal drink, Oxidative stress, COVID-19, Prophylaxis, Treatment

INTRODUCTION

Virus is the link between chemistry and biology. Like other microorganisms, water molecules make them a living entity, and they become non-living entity if we remove water molecules. Hyper-saline or sugar brine solution can remove water molecules in the organisms by osmosis and inactivate them. This is the principle used in preservation of vegetables and other food materials by pickling with hyper-saline solution or placing it in concentrated sugar brine. However, this method does not work for virus particles because: 1) Virus particles are small and water molecules have high surface tension, which prevents water molecules covering them, especially in coronavirus, which has spike proteins. 2) Many viruses have protein or lipid envelopes which are hydrophobic.

In such a situation, the surfactant can act on the virus and inactivate them. Surfactant have two sides - hydrophobic and hydrophilic ends in them. The hydrophobic ends will wedge into the protein layer of the virus and cause water

molecules from hydrophilic ends to enter them. This process finally inactivates the virus. Thus, washing with soap and detergents are effective in killing the virus.¹

COVID-19 (SARS-CoV-2) known as coronavirus is a pandemic and a threat to humans the world over. The route of entry of the virus is through nose and mouth and to some extent through eyes. All the routes of entry meet at the throat region, which leads to trachea and lungs.²

Coronavirus are organisms that cannot replicate itself and require a human host cell to replicate its nucleic materials. It has spike proteins, glycoproteins (peptomers), that facilitate attachment with ACE2 receptors in the throat region and transfer its nucleic materials into the cells for its replication.³

It reduces the attachment of coronavirus to the ACE2 receptors in the throat region by gargling with hyper-saline (3%) solution. "Post-hoc secondary analysis of data from our recent Edinburgh and Lothians Viral Intervention

Study (ELVIS) pilot randomized controlled trial (RCT) shows that hypertonic saline nasal irrigation and gargling (HSNIG) reduced the duration of coronavirus upper respiratory tract infection (URTI) by an average of two-and-a-half days".⁴ According to them, in-vitro data gives the evidence that NaCl has an antiviral effect that works across viral types and HSNIG may have a role to play in reducing symptoms and duration of illness in COVID-19.⁵

The proposal to use surfactant as prophylaxis and therapy against COVID-19 was published recently.² The authors have shown various surfactant approved by regulating authorities and readily available for trial. We can use surfactant for gargling to reduce the infections and bio-surfactant can function inside the body to inactivate the virus.² The surfactant in the extracellular fluid can coat the virus and make them inactive.² Thus use of surfactant may provide prophylaxis and therapy against COVID-19, according to the authors.

The above methods suggested are for coronavirus that enters through throat, trachea and lungs. But the virus can enter the gastrointestinal tract through food and by swallowing saliva. Alimentary canals are rich in ACE2 receptors, and viruses can gain its entry into the body easily and affect various organs. Thus mere gargling with hyper-saline or any surfactant may protect the effect of virus in the throat region and may not help in preventing the virus getting into the alimentary canal and into other organs.

Once the virus reaches the stomach, the body responds to it by reducing appetite so that the gastric pH could be at low pH, which inactivates the virus. If food is present, then pH rises and makes the virus safe in the environment, causing its spread to other regions of the alimentary canal. Low acidity in the stomach causes Gastroesophageal Reflux Disease (GERD) in the patients and therefore they are put on Proton Pump Inhibitors (PPI) to reduce acid secretion in the stomach. However, this method has adverse effects. This method helps corona virus to survive, spread to other organs of the body and affect the survival of corona patients.

Against such a backdrop, we suggest using a few sips of Matily Herbal Drink to ease the severity of GERD without affecting the action of acid on the virus in the stomach. Matily Herbal Drink may replace PPI in corona affected patients. Matily Herbal Drink is a concoction designed and made for reducing hyperglycemia and hypercholesterolemia in patients who cannot afford pharmacological methods of intervention.⁶ We also found it beneficial to patients with shingles.⁷

Hypothesis

We propose that a simple herbal concoction (Matily Herbal Drink) made of ordinary ingredients available in every kitchen, because of its inherent emulsification and surfactant properties, may act on coronavirus in the throat

region and other parts of the alimentary canal and inactivate the virus. It also relieves the severity of GERD in corona patients. Since Proton Pump Inhibitors (PPI) are not used, the acidity in the stomach is not affected. We postulate that the acidity in the stomach along with emulsifying and surfactant properties of Matily Herbal Drink may inactivate the virus and hence it could be a prophylaxis and therapy against COVID-19.

Evaluation of the hypothesis

Okra (*Abelmoschus esculentus*) mucilage in the pods protect the growing seeds inside the pods.⁷ Okra mucilage is viscous, and it is an emulsifier and a surfactant.^{8,9} Because of this reason, they use it in food industry as an emulsifier.¹⁰ "Emulsification, or to emulsify something, is defined as the mixing of two liquids that usually are unmixable together to form an emulsion".¹¹ Example, Lipase is a water soluble enzyme and cannot act on fats directly. Bile secretion in the duodenum acts on fats emulsifies fat globules where lipase can act on it. Thus okra mucilage can act on the lipid on the coronavirus coating and destabilize them.

Lysosomes are organelles that produce lysosomal enzymes that inactivate any virus or foreign antigens entering the body.¹² Lysosomes are defense mechanisms of a cell. But SARS-CoV-2 inside the host cells modulate pH and inactivates lysosomal enzymes.¹³ Under this condition, the emulsifying property of okra may help lysosomal enzymes to act on the virus effectively. Okra mucilage has immunopotential properties.¹⁴

The surfactant property of okra can wedge the protein coating of the virus and inactivate them as mentioned above. Considering the emulsifying and surfactant properties of okra mucilage in Matily Herbal Drink helped us to arrive at the logic of suggesting the hypothesis.

Empirical data

We want to present certain empirical data based on our experience. As mentioned above, Matily Herbal Drink was designed and made to reduce hyperglycemia and hypercholesterolemia in patients who cannot afford pharmacological interventions. Since it gave a "wellness" feeling we took it as a health drink at the first signs of COVID-19 infection.

A 64-year-old male with a history of diabetics showed signs of probable COVID-19 infection. He had no cold or fever in the last two years. The severe headache and temperature he had made him conclude the probability of COVID-19 infection. Throughout the night he sipped Matily Herbal Drink, which reduced his throat pain. Cold ice packs on feet and forehead reduced the temperature. After 18 hours, we contacted the health professional, and they suggested taking a course of Azithromycin 250 mg. The patient recovered quickly, leaving the health professional to doubt if the patient really had infection.

However, the antibody presence confirmed the infection. We feel Matily Herbal Drink had reduced the severity of the infection.

During recovery, the patient developed GERD because of acidity in the stomach. Omeprazole was suggested, and he used to take it in the morning. One day he took Matily Herbal Drink, which stopped the acidity problem once for all. From this empirical data, we want to show that okra mucilage in Matily Herbal Drink can prevent GERD without affecting the pH of the stomach. We believe that Matily Herbal Drink may prevent de-acidification of lysosomes in the cells.

DISCUSSION

Coronavirus enters the cell through the ACE2 receptor. Once they are inside, they deactivate lysosomal enzymes, the defense mechanism of the cell, by altering its pH to inactivate the enzymes.¹⁶ “In a series of advanced experiments, the researchers showed that lysosomes get de-acidified in coronavirus-infected cells, significantly weakening the activity of their destructive enzymes. As a result, the viruses remain intact and ready to infect other cells when they exit”.¹⁷ The concoction in the Matily Herbal Drink may prevent virus to de-acidify the lysosomal enzymes, whereby lysosomal enzymes could inactivate the virus. Thus Matily Herbal Drink shows promise to protect the human cells from de-acidification of lysosomes by coronavirus. The emulsifying and surfactant properties of okra mucilage in the drink may also inactivate the virus. Because of these reasons, Matily Herbal Drink could be a simple prophylaxis and treatment for COVID-19. It will interest to study the effect of freshly prepared and slightly fermented drink on the virus. The fermented drink produces certain organic acids which may have therapeutic potential.

ACKNOWLEDGEMENTS

The author appreciates the role of Dr. M.S. Valiathan and Sree Chitra Tirunal Institute of Medical Sciences & Technology (SCTIMST), Thiruvananthapuram, initiating him biomedical research.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

- Jabr F. Why Soap Works At the molecular level, soap breaks things apart. At the level of society, it helps hold everything together. <https://www.nytimes.com/2020/03/13/health/soap-coronavirus-handwashing-germs.html>. Last accessed on 11th September, 2020
- Pramod K, Kotta S, Jijith US, Aravind A, Abu Tahir M, Manju CS, Gangadharappa HV. Surfactant-based prophylaxis and therapy against COVID-19: A possibility. *Med Hypotheses*. 2020;143:110081.
- Luan J, Lu Y, Jin X, Zhang L. Spike protein recognition of mammalian ACE2 predicts the host range, and an optimized ACE2 for SARS-CoV-2 infection. *Biochem Biophys Res Commun*. 2020;526(1):165-69.
- Ramalingam S, Graham C, Dove J, Morrice L, Sheikh A. Hypertonic saline nasal irrigation and gargling should be considered as a treatment option for COVID-19. *J Glob Health*. 2020;10(1):010332.
- Sheikh A, Ramalingam S, Norrie J, Ward E, Graham C. Hypertonic saline nasal irrigation and gargling for suspected or confirmed COVID-19: pragmatic web-based Bayesian adaptive randomised controlled trial (ELVIS COVID-19). 2020;protocols.
- Eapen J T. Matily Herbal Drink may reduce oxidative stress, hyperglycemia, hyperlipidemia, and increases immunity-Case study reports. *GJMR*. 2020;20(8):1.0.
- Eapen J T. Managing Shingles (HZ) in Elderly with Topical Application of Acyclovir 5 mg and Increasing Immunity with Matily Herbal Drink - A Case Study. *GJMR*. 2020;20(8):1.
- Alba K, Ritzoulis C, Georgiadis N, Kontogiorgos V. Okra extracts as emulsifiers for acidic emulsions, *Food Research International*. 2013;54(2):1730-37.
- Abdul Bari H A, Ahmad M A, Yunus R B M. Formulation of Okra-natural Mucilage as Drag Reducing Agent in Different Size of Galvanized Iron Pipes in Turbulent Water Flowing System. *Journal of Applied Sciences*. 2010;10:3105-10.
- Alba K, Ritzoulis C, Georgiadis N, Kontogiorgos V. Okra extracts as emulsifiers for acidic emulsions, *Food Research International*. 2013;54(2):1730-37.
- Biologydictionary.net Editors. “Emulsify.” *Biology Dictionary*. Biologydictionary.net. <https://biologydictionary.net/emulsify/>. Last accessed on 11th September, 2020.
- Cooper G M. *The Cell: A Molecular Approach*. 2nd edition. Sunderland (MA): Sinauer Associates; 2000;Lysosomes. <https://www.ncbi.nlm.nih.gov/books/NBK9953/>. Last accessed on 11th September, 2020.
- Blaess M, Kaiser L, Sauer M, Csuk R, Deigner H P. COVID-19/SARS-CoV-2 Infection: Lysosomes and Lysosomotropism Implicate New Treatment Strategies and Personal Risks. *Int J Mol Sci*. 2020;13;21(14):4953.
- Chen H, Jiao H, Cheng Y, Xu K, Jia X, Shi Q, Guo S, Wang M, Du L, Wang F. In Vitro and In Vivo Immunomodulatory Activity of Okra (*Abelmoschus esculentus* L.) Polysaccharides. *Journal of medicinal food*. 2016;19:253-65.
- Messing J, Thöle C, Niehues M, Shevtsova A, Glocker E, Borén T, Hensel A. Anti-adhesive properties of *Abelmoschus esculentus* (Okra) immature fruit extract against *Helicobacter pylori* adhesion. *PLoS One*. 2014;9;9(1):e84836.

16. Ghosh S, Dellibovi-Ragheb TA, Kerviel A, Pak E, Qiu Q, Fisher M et al. β -Coronaviruses Use Lysosomes for Egress Instead of the Biosynthetic Secretory Pathway. *Cell*. 2020;183(6):1520-35.e14.
17. NIH editors. NIH scientists discover key pathway in lysosomes that coronaviruses use to exit cells. 2020. <https://www.nih.gov/news-events/news-releases/nih-scientists-discover-key-pathway->

lysosomes-coronaviruses-use-exit-cells. Accessed on 11 September 2020.

Cite this article as: Eapen JT. Matily herbal drink could be a prophylaxis and therapy against COVID-19: a possibility. *Int J Res Med Sci* 2021;9:651-4.