



Role of Cotton and Turmeric Smoke as a potential treatment of COVID-19

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ABSTRACT

COVID-19 pandemic is rapidly spreading at an increased rate. Current treatments focus on treating the symptoms or the complications which arise from the virus. Various medicines are at various phases of trial, some of them have shown promising results to potentially cure COVID-19. Curcumin is an active and defining element found in and extracted from turmeric (Curcuma longa). Turmeric as traditionally used in India, turmeric in general and curcumin in specific as per various researches conducted, is proven to act as antiviral, anti-inflammatory, antibacterial, anti-fibrotic, antioxidant, anti-fungal, antithrombotic agent when consumed orally. Studies have also suggested Curcumin to be explored as cure or remedy for COVID-19 due to its inhibition properties specific to SARS CoV-2. In this thesis, we attempt to analyze the possible role of cotton turmeric smoke inhalation as a potential treatment to cure or reduce the effects of COVID-19.

Keywords: COVID-19, SARS CoV-2, Turmeric, Curcumin, Cotton Turmeric smoke

1. INTRODUCTION

COVID-19 caused by SARS-Cov-2 has disrupted the world as we knew. As on 28th July 2020, the total number of confirmed cases are 16.3 Million with 650 thousand deaths and 5.7 million active cases. Major impacts are

- Direct death from the disease. Loneliness in pain and death causing suffering to the deceased and family
- Physical suffering, dementia, mental trauma caused to critically ill patients and their family
- Disruptive impact on the livelihood of people due to loss of jobs, loss of income sources and disruptions in the economy
- Economic impacts on the countries.

As the countries are easing lockdowns, the cases are surging at an increased rate. Major hope of the world now is in the development of multiple vaccines at various phases of trial. The final viability and long-term effects of the vaccines are yet to be determined. Some of the medicines at trials have also shown promising results and hopefully may potentially cure COVID-19.

All medications and treatments currently being used in the hospitals focus on controlling the symptoms and complications giving time to the immune system to fight the virus by itself.

2. PROPOSED TREATMENT

In India, a traditional but not a very popular procedure today, to cure common cold is practiced. In this, Turmeric powder is poured on Cotton and is kept on hot red coal (This does not burn the cotton instantly) and the resultant smoke is rigorously inhaled for more than 20 minutes. This cures the common cold instantly if the symptoms had started the same day. If the common cold virus was present for more than a day, this technique gives instant relief and greatly reduces the symptoms and cures the same in a night or maximum time of one day. There is no side effect of this procedure on healthy individuals.

2.1 Supporting evidences

We explore the reasons on why this procedure may have the potential to work as an effective treatment against COVID-19 to reduce the recovery time and fatality rate. It is understandable that, common cold treatment may not even be a candidate worth considering for the treatment of COVID-19. However, here we are attempting to understand the properties of the ingredients in this procedure, understand its effect on virus in general, SARS CoV-2 in specific and complications arising from COVID-19. The following points give a compelling reason for its potency;

- a) For any virus – common cold, influenza, others and their thousands of varieties, there is no direct cure. Medications often work on symptoms, many times to prevent further spread or multiplication, but it does not have direct effect on the virus to end it. However, as stated earlier, this procedure has almost spontaneous effect on the common cold. We found only one

- research study which analyzed and experimented on the medicinal use of Turmeric smoke. It has been noted in this study, that “it is an acquired knowledge that inhaling smoke from burning turmeric to relieve congestion due to chronic colds or cough, breathing in through each nostril individually for the smoke to release large amounts of mucous from the sinus cavity. In this usage, the relief factor is almost in seconds, spontaneous” [1]. In the experiment, antibacterial and anticancer properties of turmeric smoke was examined and confirmed. Turmeric smoke particles (turmeric smudge) were identified as Turmeric nanoparticles and Nano Carbon. The nano carbon supplemented, and enhanced effect derived from turmeric nanoparticles [1].
- b) The curcumin in Turmeric is proven to act anti-viral against several viruses including Hepatitis viruses, Influenza viruses, Zika virus, Chikungunya virus, HIV, HSV-2, HPV, RSV, Noroviruses, Arboviruses. It fights virus in multiple ways such as by inhibiting entry, particle production inhibition, gene expression inhibition, replication and budding inhibition, integrase inhibition, protease inhibition [2].
 - c) Specific to SARS CoV-2, by in-silico analysis, molecular docking analysis study conducted [3] [4][5] concluded that Curcumin and 4 other phytochemicals of the total of 267 compounds present in Curcuma Longa (Turmeric) can inhibit the SARS CoV-2 main protease (Mpro) protein enzyme which can prevent multiplication of virus.
 - d) The major cause of death in COVID-19 is Acute Respiratory Distress Syndrome (ARDS) caused by inflammation in Alveoli due to Cytokine storm and dead cell debris. Curcumin has anti-inflammatory property and has been proven to reduce the effects of inflammation in lungs in general and in asthma patients in specific [6] [7] [8] [9]. Contents of turmeric, other than curcumin are also proven to possess anti-inflammatory properties [10]. Further, anti-fibrotic property and wound healing property [11] of curcumin would also help in the prevention and rejuvenation of lung tissue damages and alveoli inflammation, flooding and damages. An experiment concluded that curcumin nano particles does wound healing even more effectively [12]. In an In vivo animal model experiment, it was observed that, curcumin showed promising efficacy against viral infection induced ALI/ARDS. Toxicity studies conducted on animals have indicated no adverse effects with prolonged use [13]. In a research study, the excessive production of IL-17 that has been observed in patients with ALI/ARDS from COVID-19 has been recapitulated in mice with lipopolysaccharide (LPS)-induced ALI [14]. In an In vivo animal model experiment, it was suggested in the conclusion that curcumin has remarkable protective effects on LPS-induced ALI in rat [15].
 - e) In a study, of 1308 studies, 28 eligible studies were reviewed and evaluated, representing 3448 patients. The overall proportion of bacterial co-infection in COVID-19 was found in 7.1% of the patients [16]. As per another study [17], of 257 patients, co-infection was found in 93.8% of the patients. 22 pathogens were discovered in the co-infection. Such co-infections pave the way for immune deficiency and complications. Turmeric in general and curcumin in specific are proven to be anti-bacterial. An experiment concluded that dried curcumin loaded nanoparticles has antimicrobial properties [18]. Another experiment concluded that nanocurcumin has enhanced potency as anti-bacterial and anti-microbial property in comparison to parent curcumin particles [19]. Curcumin in specific and turmeric in general have also been demonstrated as antioxidant, anti-fungal, anti-fibrotic [20]. All these properties of turmeric can help to prevent and remedy the pathogenic complications resulting from COVID-19.
 - f) Curcumin is proved to have antithrombotic property such as anticoagulant property and fibrinolytic property [21]. In an In vivo study, results suggested that curcumin and bisdemethoxycurcumin (another component found in turmeric) have anticoagulant and antithrombotic activities [22]. This helps to prevent or repair blood clots which occurs in COVID-19 patients which is also the cause of death in some cases.
 - g) Various elements found in turmeric other than curcumin also possess various properties described above. However, we have focused our review on curcumin as it is the defining element with higher medicinal potency properties. Existing research and experiments available is also focusing mainly on curcumin alone.
 - h) In Turmeric smoke, the nano particles ranging from 5nm to 80nm are present in abundance [1]. They are directly delivered to the area effected, that is lungs. This can help to directly inhibit and target SARS CoV-2 which is bigger (60 nm to 200 nm) than these particles. The right temperature in the turmeric smoke may add an advantage, but this needs to be confirmed. With all the reasons for potency of turmeric, turmeric smoke may have a specific enhanced and direct efficacy as inhaling the same will deliver this directly to the area effected, i.e.; lungs, hence can quickly and instantly act to remedy the virus and complications.
 - i) Cotton smoke may be helpful if used at the onset of COVID-19 symptoms because, cotton smoke inhalation can activate the pulmonary macrophages, neutrophils, endothelial cells, large amounts of cytokines and chemokines, increase Nitric Oxide production [23]. These when used with turmeric smoke can effectively fight against virus at the initial stages giving no opportunity to spread further.

2.2 Technique of usage

Please pour 1 spoon of Turmeric powder on Cotton on Red Hot Coal. Indicative images are provided below.



Fig. 1: Hot red coal



Fig. 2: Cotton



Fig. 3: Turmeric powder

The coal should be made from any wood not having any type of medicinal property – positive or negative. This is because, coal is used to achieve the gradual smoke and does not have any medicinal importance in this procedure. For this procedure, pure and undiluted turmeric powder should be used. The content of curcumin in turmeric ranges from 2% to 11% depending on the planted rhizome and the soil. Since curcumin is a key element in turmeric for the medicinal potency, it is suggested to use turmeric powder containing at least 5% curcumin. There are maximum limits suggested for oral consumption of curcumin (8g per day for 3 months [24]) and turmeric. In this case, since the turmeric smoke is directly being inhaled to respiratory system, the dosage may differ. However, since most of the smoke is lost and only some portion is inhaled, the dosage being suggested here may not pose a problem. Inhale the smoke generated into lungs predominantly through nose and seldom through mouth. One will cough from this smoke and it is natural. One may do this for more than 20 minutes in a single session. The frequency and duration of the application in a day should be as per the comfort level of the patient ranging from 3 to 5 times in a day and around 20 minutes each time. However, this should be studied and confirmed in trials. The cotton and turmeric powder should be added as and when they are mostly burnt. This procedure may be followed immediately after the onset of symptoms or on patients' knowledge that he is positive for COVID-19.

2.3 Way forward

The procedure is already used on healthy individuals without any side effect. The medicinal potency is proven by in-silico, in-vitro, in-vivo animal model and human trials for various complications that are identical to COVID-19 complications. This procedure can be considered more as a home remedy and less as a medicine for the purpose of evaluation of risks associated. Hence, this may directly be proceeded to clinical trials in COVID-19 patients. The effectiveness of this procedure at various stages of COVID-19 also needs to be studied. If this does effectively treat, the dosage and more efficient and easier methods to inhale the smoke should be studied. If this does cure COVID-19, simultaneous voluntary application of this procedure for several days by the population may even end the pandemic.

2.4 Caution

It is known that excessive inhalation of cotton smoke can injure and damage lungs. While this medicinal smoke does not have any side effect on healthy individuals as per our experience, this should be carefully examined and used in COVID-19 patients.

If one experiences any problem or difficulty in breathing or chest pain, they should not continue this procedure. Further, since this has been used for Common Cold only 1-2 times in a days' time, with the frequently being suggested here (that is 3 to 5 times over several days) one should be careful to ensure that it does not have any adverse effect. Excess inhalation of cotton smoke is proven to cause inflammation and damage lungs in multiple ways. Hence, the effect of Cotton smoke, dosage should be carefully evaluated and administered. If this procedure is effective, the role of cotton smoke in moderate and severe COVID-19 cases needs to be studied to ensure that cotton smoke does not dangerously damage the lungs since existing minimal damage may pave way for that. This thesis provides theoretical reasons on why this technique can work as an effective treatment for COVID-19. But the actual dosage and usage should be confirmed in a clinical trial.

3. CONCLUSION

Based on the evidences presented in this thesis, turmeric in general and curcumin in specific has strong properties from many dimensions to fight the COVID-19. It has been suggested in many research studies and concluded experiments that Curcumin in specific and turmeric in general are antiviral, anti-inflammatory, antibacterial, anti-fibrotic, antioxidant, anti-fungal, antithrombotic agent, which covers all the complications that could arise from COVID-19. In silico studies have also revealed its potency against SARS CoV-2. The question is what is the most effective method of delivery of this substance to our body to fight the virus? As per our limited knowledge, presently, oral consumption method is also not systematically and effectively used against the virus. An effort is made to connect existing evidences, and the traditional procedure is suggested here for the mechanism of delivery to the body, which also has scientific evidences to suggest the efficacy. The scientific community and the governments should investigate this and evaluate all the possibilities on a very urgent basis to possibly end the ongoing crisis.

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