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SAFETY AND EFFICACY OF SENNA MAKKI IN THE TREATMENT OF THE CORONAVIRUS DISEASE 2019: A RETROSPECTIVE REVIEW

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Abstract:

Objective: *To evaluate whether Senna Makki, used in conjunction with a plethora of other therapeutic agents, yields any added benefits in treating a COVID-19 infection.*

Methods: *A retrospective chart review of 1184 consecutive patients who used Senna Makki for a variable duration of their illness will be performed. Data pertaining to their age, comorbidities, disease presentation, and the eventual outcomes will be collated and analysed using the SPSS 25.0 statistical package.*

Results*: A total of 1184 patients were included in the study. The mean age of the patients was 37.5 years. Of those included, 25% had a prior history of diabetes while 18.5% of the patients reported one or more of the other comorbidities, including hypertension and coronary heart disease. Notably, the recovery rate was exorbitantly high, with almost all of the patients recovering after a variable duration of illness. The mean duration for which the Senna Makki treatment regimen was used was 12 days.*

Conclusions: *Used in conjunction with the vast array of therapeutic agents already available, Senna Makki might yield beneficial COVID-19 related outcomes.*

Key Words: *Senna Makki, COVID-19 infection and therapeutic agents.*

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INTRODUCTION:

Coronavirus disease 2019 (COVID-19) is the Severe Acute Respiratory Syndrome caused by Coronavirus 2 (SARS-CoV-2) [1]. COVID-19 was declared by the World Health Organization (WHO) on March 11, 2020 as a global pandemic. Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) emerged in Wuhan, China, where the first COVID-19 case occurred. reported in December 20192 However, due to its fast transmission, SARS-CoV-2 has spread its roots to other neighbouring countries.

According to the Johns Hopkins Corona Virus Resource Center, major outbreaks have occurred in countries such as the US, Brazil, India, Russia, South Africa, Peru and Mexico. . and international travel. It is well known that COVID-19 is transmitted through droplets from the respiratory tract of an infected person when the person coughs, sneezes or talks, or when they touch a dirty surface and then touch their eyes, mouth, or nose before washing their hands [2-3]. The most common symptoms of COVID-19 include, but are not limited to, shortness of breath, dry cough, fever, and / or fatigue, which can lead to COVID-19 pneumonia. Since the COVID-19 virus is new (ie, New), there are many unknowns about possible treatment and treatment, and many scientists around the world are constantly trying to find a cure for the virus [4]. To date, there is no vaccine for COVID-19, and scientists and healthcare professionals are considering various treatment options. Due to the great panic, shock and fear that arose among people, people began to use herbal preparations and other treatments on their own, although there is currently insufficient scientific evidence to prove the effectiveness of these herbs and drugs for the treatment of COVID-19. However, several studies emerged that later debunked the myths about herbal and pharmaceutical drugs used to treat COVID-19. This also includes some antiviral medications recommended as a possible treatment and tested in numerous clinical trials around the world. In many cases, the results are promising, but no firm conclusions have yet been drawn [3-4].

The severity of disease and death from COVID-19 varies widely from country to country. This can be explained by various social and economic factors specific to a given country, such as ethnicity, people's eating habits, social activity, genetic differences and climatic differences. In addition, standard measures and procedures adopted by many governments to control the epidemic are critical to understanding the dynamics of COVID-19 spread in the affected population and the morbidity and mortality rates in the country [5-6]. Countries with low mortality rates, COVID-19 of this vaccine Has a vaccination policy BCG, which leads to thinking about the possibility of a protective action against this vaccine. While several studies report that those countries with a BCG childhood immunization policy have the advantage of COVID-19 and have low morbidity and mortality rates, they are prone to errors due to multiple confounding factors. Clinical trials are still ongoing and so far there is no concrete evidence [7-8]. Therefore, the WHO does not recommend using the BCG vaccine to prevent COVID-19 as it does in the absence of evidence. In addition, extensive and unnecessary use of the BCG vaccine can result in a deficiency, and because BCG is a vaccine used to prevent severe forms of tuberculosis in children, it can put the population, the most vulnerable new-borns, at risk. Especially for the general public in Pakistan, a popular misleading myth has spread that a plant called Senna Makki could potentially cure COVID-19, which was later confirmed by the governor of Sindh. Some media reports shared his experiences of using Senna Makki leaves with ginger during quarantine, helping him get rid of COVID-19 [7-8]. Senna leaves and fruits are used medicinally. There are varieties of Senna, the most common of which is from Egypt, Cassia acutifolia, also known as "Senna of Alexandria". Cassia angustifolia is the second most common species of Senna from India known as "Tinnevelly Senna" [9-10]. Cassia acutifolia is native to central and northern Sudan and Sinai and is grown along the Nile, while Cassia angustifolia is native to Somalia and southern Arabia and is grown in northwest Pakistan and southern India [11-12].

The genus of Senna used by medicinal plants in Indo-Pak and Arab countries is Cassia angustifolia marketed under the name "Senna Makki". The aim of this study is to determine the whether Senna Makki, used in conjunction with a plethora of other therapeutic agents, yields any added benefits in treating a COVID-19 infection.

MATERIALS AND METHODS:

A retrospective chart review of 1184 consecutive patients who used Senna Makki for a variable duration of their illness will be performed. Data pertaining to their age, comorbidities, disease presentation, and the eventual outcomes will be collated and analysed using the SPSS 25.0 statistical package.

RESULTS:

A total of 1184 patients were selected for this study. The incidence of various symptoms are given in Table-1. The most usual symptom was fever in

1124(94-53%) patients, Myalgia in 656(55.17%) patients, Cough in 1156(97.22%), Dyspnoea in 232(19.51%) and Anosmia in 765(64.33%) patients.

Table 1: The prevalence of the various symptoms within the study population

Symptoms	Prevalence
Fever	1124
Myalgia	656
Cough	1156
Dyspnoea	232
Anosmia	765

The Graphical presentation of various symptoms are elaborated in Figure-1.

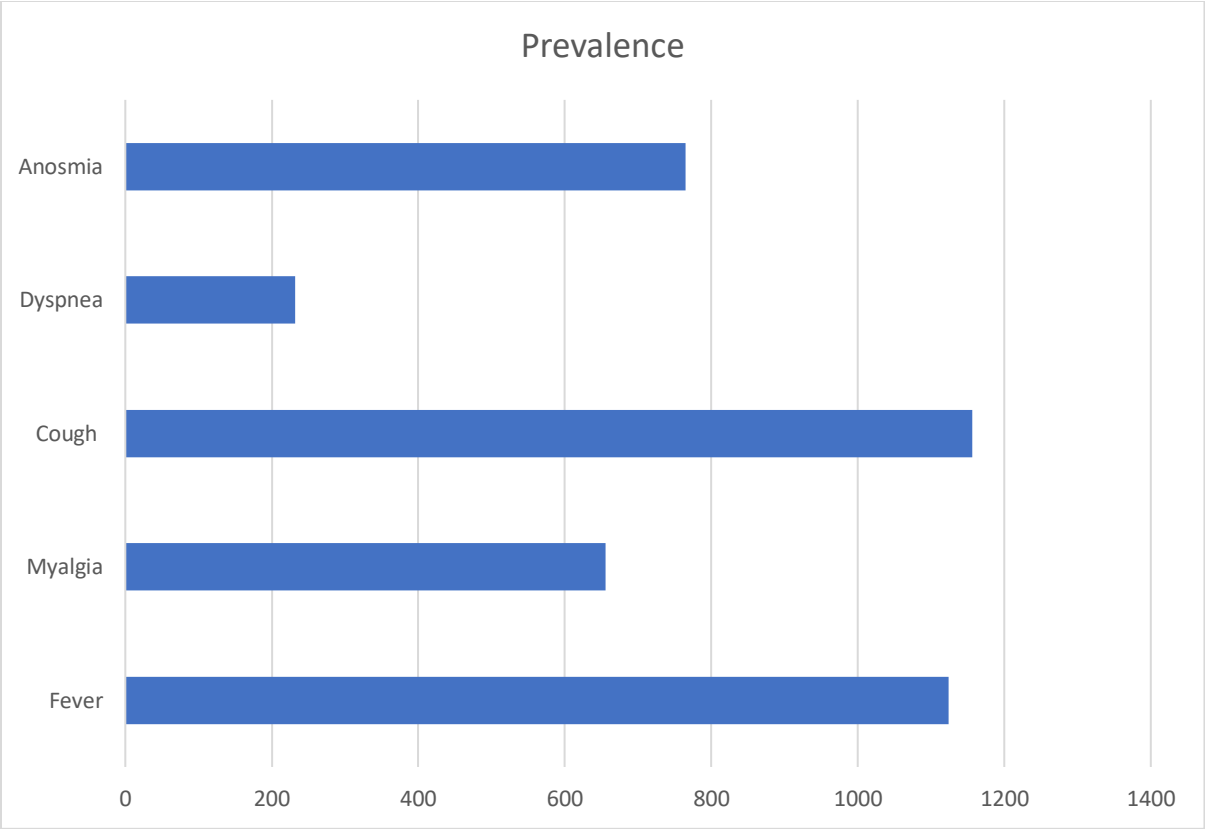

Figure 1: A graphical depiction of the symptomatology observed within the patient population.

Table 2: Disease outcomes amongst the two groups.

Disease outcomes		Senna group (n= 600)	Control group (n=584)	p-value*
Survival status	Discharged/recovered	595	540	0.001
	Dead	5	44	
Oxygen requirement	Yes	10	350	0.005
	No	590	234	
Pneumonia	Yes	5	350	0.002
	No	595	234	
Shock	Yes	2	24	0.004
	No	598	560	
Secondary Infection	Yes	20	110	0.007
	No	580	474	

The comparison of patient's disease outcome using Senna Makki group and control group is given in Table-2. 595 out of 600 patients recovered in Senna Makki group and 540 recovered in Control group from 584 patients. Five patients died in Senna Makki group and 44 in Control group. Oxygen needed in 10 patients in Senna Makki group and 350 needed oxygen in control group. Pneumonia develop in 5 patients in in Senna Makki group and 350 patients develop pneumonia in control group. Shock was observed in two and twenty-four patients in Senna Makki and Control group. The secondary infection was noted in 20 and 110 patients in Senna Makki and Control group.

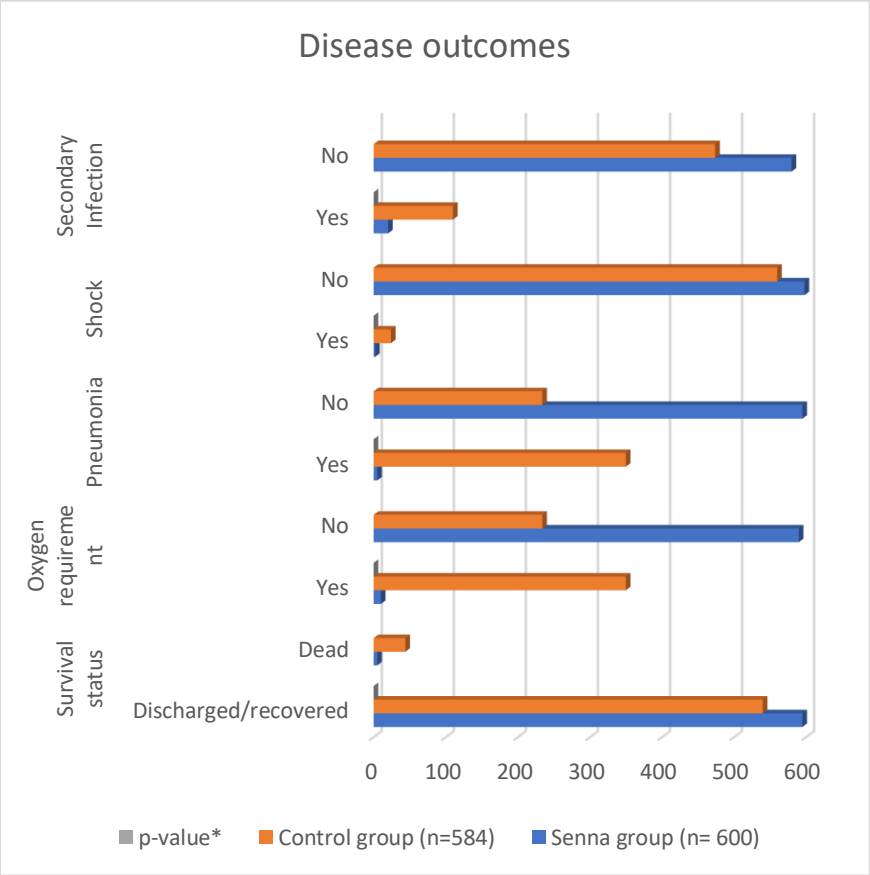

Figure 2: A graphical depiction of the comparison of the disease outcomes.

DISCUSSION:

The US Food and Drug Administration (FDA) has approved Senna Makki as an over-the-counter drug. Digestive disorders such as chronic constipation, haemorrhoids, irritable bowel syndrome, weight loss and depression, asthma, eczema, and other dermatological conditions [11-12]. Senna Makki is known to have a strong laxative effect and is mainly used to treat chronic constipation. Includes anthracene derivatives such as sennosides, which release three types of aglycone upon hydrolysis with bacterial enzymes in the gut; namely, anthraquinones, anthranols and ocanthrons [13-14]. These aglycones are an active part of the sennocytes and have a laxative effect on the transport of water and electrolytes. The recommended dose of Senna Makki is 8.5 mg per day for children, 17.2 mg for children over 12 years of age and 34.4 mg for adults and 28 mg per day (divided into two doses). until postpartum pregnancy [14]. There is no such study published showing the efficacy of Senna Makki in COvid-19. The results of our study with Burhan et.al study in Nepal. One more study published in India by Thakur Kumar and his colleagues shows the same results like our study. Its consumption is contraindicated in children under 2 years of age and in patients with intestinal obstruction, ulcerative colitis, Crohn's disease, appendicitis, dehydration, diarrhea and heart disease. In addition, Senna Makki has had significant drug interactions in people taking birth control pills (vaginal ring, patch, and pills), digoxin, warfarin, diuretics, estrogens, field horsetail, and licorice [15-16].

The ingredients of Senna Makki are powerful laxatives and can irritate the lining of the cups, which means it can worsen symptoms in COVID-19 patients who may also suffer from diarrhoea and nausea, which are symptoms of COVID. However, due to the growing publicity due to its effectiveness against COVID-19, it soon became the holy grail of treating COVID-19 in Pakistan, and people began using excessive amounts of this drug without considering the risks and side effects. about the benefits. The fact that it can cause severe dehydration and electrolyte imbalance, which can be fatal, along with abdominal pain, cramps, fainting and discomfort, has been ignored[17]. Consuming Senna Makki for more than two weeks can cause liver damage, coma, or nerve damage. Breastfeeding mothers should consult their doctor as Senna Makka ingredients may pass into breast milk in lesser amounts; However, it is relatively safe when taken in the recommended amounts and does not affect the stool of a breastfed baby, although its safety in pregnant women has yet to be confirmed. The people of Pakistan were heavily influenced by the claim of a British herbalist that he said he treated 150 patients affected by COVID-19 by prescribing Senna Makki, which was also endorsed by Pakistani government. Soon the public in Pakistan started using the Senna Makki right away and the markets saw a huge increase in prices. The media reported that Senna Makki, formerly sold at 300 PKR / kg, is now selling at 1500-2000 PKR / kg[18]. There is still much controversy over the use of Senna Makki as a COVID-19 drug. Pakistani health experts firmly called on the public to avoid Senna Makki, stating that there are no clinical trials or studies supporting Senna Makki's effectiveness in treating COVID-19. But health experts agree Senna Makki has the potential to boost immunity. There are several studies supporting this claim as anthraquinone, one of the anthraquinone components in Senna Makki, has been found to have anti-inflammatory, antiviral and immune-boosting effects[19]. In addition, a study was conducted to assess the possible role of anthraquinone derivatives in the treatment of COVID-19. The results of this study were positive; however, findings were based on computer simulations. Therefore, clinical trials are urgently needed to confirm these findings [20].

Due to the many complications associated with Senna Makki and the lack of clinical data, healthcare professionals have advised against using it to treat COVID-19 [21].

CONCLUSION:

It is imperative that the public strictly follow the healthcare provider's advice, guidance and guidelines for preventing COVID-19. Senna Makki has shown excellent results in combating Covid-19. But as an emergency measure to control COVID-19 and further exacerbations, it is recommended that the public avoid self-medication with drugs and herbs they believe may have a potential role in treating COVID-19. This has been proven in clinical trials and studies. As with evidence-based medicine, clinical trials play a key role in determining the effectiveness of a particular treatment for a given disease. Therefore, there is a critical and necessary need for additional clinical trials to assess the potential role of Senna Makki in the treatment of COVID-19.

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