

Effects Of Herbal Product (Kerra Capsule) On Clinical Features of Covid-19 Among Home Isolation Patients In All Age Groups (A Retrospective Study)

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Abstract

This research study aims to study the effects of a traditional herbal product (Kerra capsule) on the clinical characteristics of patients infected with COVID-19 during home isolation. A retrospective study was conducted among 2,510 patients infected with COVID-19 tested for COVID-19 in Pathum Thani Province. The age of the patients was between 4 months to 101 years. The patients received herbal product (Kerra capsule) before self-isolation at home under the supervision of Prachathipat Hospital between July to August 2021. After receiving the Kerra capsule, most of the patients could recover from COVID-19 within 5 days (51.91 %). During the treatment, there was no increased severity of symptoms, no ventilators were used, there were no major side effects, no patient referrals, and no patient deaths. We found the Kerra capsule effect on the patients and showed an improvement in treatment outcomes for 99.60 percent. We concluded that the Kerra capsule is an alternative treatment for COVID-19 patients due to it is safe and cost-effective during the COVID-19 situation.

Keywords: Herbal Product; Herbs; Kerra; Covid-19

INTRODUCTION

Recently, the situation of Coronavirus Disease 2019 (Covid-19) pandemic is still severe. There are 263,248,748 infected cases and 5,237,114 deaths globally (Emergency

Operations Center Department of Disease Control, 2021). In Thailand, there are a total of 171,978 cases, which are 4,886 new cases, 2,120,758 total confirmed cases and 20,812 deaths. Therefore, the Department of Disease Control in Thailand has implemented measures

to prevent and control the spread of COVID - 19. The Ministry of Public Health has campaigned for all citizens to strictly follow Self- Protection Measures (DMHTTA) , D: Distancing with at least 1-2 meters distance, M: Mask wearing H, Hand washing, T: Temperature check, T: Testing for COVID-19, and A: Application Thaichana/ Mor Chana. All citizens can assess themselves in the application " Thai Safe Thai" for risk of infection to reduce the spread (Emergency Operations Center Department of Disease Control, 2021) . However, the spread of COVID - 19 and death is continuing due to a mutation of the virus causing thousands of infections per day resulting in the government hospitals being overwhelmed by the number of patients. Therefore, there are guidelines for caring for covid patients at home (home isolation) under the consideration of a doctor and the monitoring system. Most recoveries from COVID-19 occur within the first 10.3 ± 8.1 days after treatment/ infection (Ryan HW Cho, 2021) . Guidelines for treating COVID- 19 patients depend on the manifestation of symptoms and the severity of the disease. (Ministry of Health, 2021) In some cases, doctors may consider favipiravir as a treatment. However, it has several side effects such as the potential for a teratogenic effect and increased uric acid levels. It also should be used with caution in pregnant women and patients with impaired liver function (Ministry of Public Health, Medical Information Center, 2021).

In Thailand, medicinal herbs are another alternative treatment for treating COVID - 19 in asymptomatic patients or patients with mild symptoms of the disease. For example, the study by Benjapolphithak U. , Wisitthanon K. , Sawangtham T, Thanirat D. , and Wanarat K. (2021) reported the use of *Andrographis paniculata* for the treatment of Covid - 19. They found that it can prevent symptoms of Covid - 19. The study was conducted on 526 patients who did not receive *Andrographis paniculata* and 309 patients who received *Andrographis paniculata* with 180 mg/day of *Andrographolide* in comparison. It

was found that the patients who did not receive *Andrographis* had more severe progression, such as pneumonia or required intubation. For the patients receiving *Andrographis paniculata*, only 3 patients (0.97percent) had severe symptoms (0.97percent), so the number needed to treat is equal to 7.32, meaning that the administration of *Andrographis paniculata* in every 8 COVID- 19 patients can reduce one incidence of pneumonia. The use of *Andrographis paniculata* can prevent the risk of pneumonia by 94.3 percent. Nevertheless, the consecutive use of *Andrographis Paniculata* for a long time can cause a myriad of side effects and there are also other limitations, such as prohibited use in pregnant women, breastfeeding women, patients with liver disease, patients with kidney disease, etc. (Yongstar M., 2018).

In this study, we proposed another traditional Thai herb that may have a potential effect on COVID- 19. Taksila formula is an herbal product recipe that Thai people have used since ancient times for the treatment of epidemic diseases which includes herbal formulas (Kerra capsule) . Kerra capsule contains 9 main herbal ingredients, and has been registered in the traditional medicine formulas with the Food and Drug Administration (FDA) , Ministry of Public Health with the registration number G 40/ 57 used to treat fevers. The herbal recipe helps to reduce heat, cure fever, cure cough, reduce headache, eliminate phlegm, nourish the lymphatic system, boost the immune system, reduce restlessness, reduce inflammation, pain, and swelling, and improve heart and blood circulation (Sun J, et al., 2019, & Banskota AH, et al., 2000 & Singthong J, et al., 2014) Using traditional herbal remedies as an alternative treatment can reduce the cost of treating COVID-19.

From the COVID-19) situation report in Pathum Thani province on August 11, 2021, there were 25,759 confirmed cases, and 12,781 cases were undergoing treatment. At that time, there was a shortage of antipyretic drugs to alleviate the symptoms of COVID- 19,

Therefore, Kerra capsules were an alternative for treatment. In his study, we are interested in conducting a retrospective study on the effects of a traditional herbal product (Kerra capsule) on the clinical features of COVID-19 in those who are self-isolating at home. The results can be used to support the use of the traditional herbal product (Kerra capsule) as an alternative for the treatment of COVID-19.

OBJECTIVES

To conduct a retrospective study on the effect of a traditional herbal product (Kerra capsule) on the clinical features of COVID-19 and the side effects of patients who are infected with COVID-19 and self-isolating at home.

RESEARCH METHODOLOGY

A retrospective cohort study based on data from patients who are infected with COVID-19 was conducted in this study. This research is descriptive research by conducting a retrospective study (Retrospective cohort study) based on data from infected patients who are infected with COVID-19 in home isolation under the supervision of Prachathipat Hospital and the Provincial Administrative Organization, Pathum Thani Province

POPULATION AND SAMPLES

The population in this study is 3,194 COVID-19 patients who tested for COVID-19 in Pathum Thani Province and received a traditional herbal product (Kerra capsule) from July to August 2021. We conducted a retrospective study by selecting complete data for 2,510 samples.

The inclusion criteria are the following complete information as specified in the record form, ATK test results before and after quarantine, ability to communicate in the Thai language, and voluntarily provide information. The exclusion criteria are unable to contact the patient.

RESEARCH TOOLS

The research tool in this study is a data record form to collect information from a report from the Pathum Thani Provincial Administrative Organization that collects information about patients with COVID-19 who take the traditional herbal product. The data on ATK test reports and an interview form were applied to collect more information from the patients such as for monitoring symptoms and side effects for further benefits.

QUALITY INSPECTION OF TOOLS

The quality of the form was tested by the IOC value using 3 experts' assessments, to improve the quality of the form according to the recommendations. After that, the form was tested on patients with similar characteristics to our subjects. Before collecting the data, the IOC value was in the range of 0.66-1.00.

DATA COLLECTION

The data was collected from the patients tested for COVID-19 in Pathum Thani Province, Thailand in August 2021 to study the effect of an herbal product (Kerra capsule), and the satisfaction of herbal product (Kerra capsule) on clinical characteristics of COVID-19 in home-isolated patients infected with COVID-19. The data was collected from Pathum Thani Provincial Administrative Organization's database.

DATA COLLECTION METHOD

Our method of data collection is divided into 2 parts. The first part is gathering information from data sources and the second part is collecting information from interviews. Data collection from the source is as follows:

- 1) Sending a letter requesting information from the Pathum Thani Provincial Administrative Organization
- 2) Receiving the information
- 3) Excluding incomplete data
- 4) Recording information of patients using the traditional herbal product to the data record form, and finally encryption of the obtained data for further analysis.

The data collected from interviews were conducted as follows: 1) Request approval from the community leader to access the community area for interviewing 2) Contact and coordinate with the information provider 3) Training research assistants on the use of the interview form to record data by the head researcher 4) Gather information 5) Research assistants explained to the participants along with certifying consent form to the participants in study 6) Analyze the collected data and summarize results. This study was conducted from December 2021 to January 2022.

RESEARCH PROCEDURES

We conducted research by firstly requesting permission to access and use the information before using it in our research, and reviewing reports from July to August 2021 using the COVID-19 screening criteria. After the research has been approved by the ethics committee, the data was collected, analyzed, and concluded from the research study.

DATA ANALYSIS

Descriptive statistics were used to describe patient data by finding the frequency, percentage, mean, and standard deviation of the qualitative data which is gender, age, and the number of days from symptoms to disappear.

RESEARCH ETHICS

The research protocol was submitted for approval by the Human Research Ethics Committee, Boromarajonani College of Nursing Nopparat Vajira COA No. 11/2564 ERB No. 16/2564. After that, permission to access the data was requested from the Pathum Thani Provincial Administrative Organization, the consent form was collected from the participants in the research project according to the basis of research ethics.

RESULTS

General characteristics were classified by sex, age range, the number of diseases of each patient, type of disease is as follows in Table 1:

Table 1 General characteristics classified by sex, age range, number of diseases of each patient, and type of disease.

		Number (patients)	%
Sex			
	Male	1,128	44.94%
	Female	1,382	55.06%
	Total	2,510	100.00%
Age Range (4m.-101y.)			
	0 -17	252	10.04%
	18-59	1,967	78.37%
	60 and over	291	11.59%
	Total	2,510	100.00%
The Number of Diseases of Each Patient			
	None	2,152	85.74%
	One	266	10.60%
	Two	79	3.15%
	Three and more	13	0.52%
	Total	2,510	100.00%
Type of Disease			
	Hypertension	153	33.12%

		Number (patients)	%
	Diabetes	98	21.21%
	Hyperlipidemia	49	10.61%
	Allergies	43	9.31%
	Others	119	25.76%
	Total	462	100.00%

Table 1 shows the general characteristics of 2,510 cases of patients infected with COVID-19, who were in isolation at home, and received the herbal product (Kerra capsule). From the data classified by sex, most patients were female, with a total number of 1,382 patients representing 55.06 percent, followed by males with a total number of 1,128 patients, which were 44.94 percent.

The age of the patients was between 4 months to 101 years. There were 1,967 patients aged 18-59 years old, 252 patients aged 0-17 years old, and 291 patients aged 60 and over, representing 78.37, 10.04, and 11.59 percent of the cohort, respectively.

For the data classified by the number of underlying diseases, most of the patients had no

underlying diseases (2,152 patients, 85.74 percent). Of those with medical conditions, most of them have 1 disease that is 266 patients, representing 10.60 percent. There were 79 patients with two diseases, which is 3.15 percent, and 13 patients with over 3 diseases. When the data was classified by the type of underlying diseases, there were 462 patients with underlying diseases. There were 153 patients with hypertension which was the majority of those with underlying diseases, accounting for 33.12 percent. There were 98 patients with Diabetes (21.21 percent), 49 patients with hyperlipidemia (10.61 percent), 43 patients with allergies (9.31 percent), and 119 patients with other diseases (25.76 percent).

Table 2 Regular Intake of an herbal product (Kerra capsule) of Patients Infected with COVID-19

		Number (person)	%
Symptoms before taking the herbal product (Kerra capsule)			
	Fever	1,540	61.35%
	Cough	1,402	55.86%
	Sore throat	977	38.92%
	Rhinorrhea	693	27.61%
	Body ache	562	22.39%
	Loss of smell	413	16.45%
	Loss of taste	321	12.79%
	Headache	206	8.21%
	Fatigue	71	2.83%
	Diarrhea	35	1.39%
	Conjunctivitis	6	0.24%
	Skin rashes	2	0.08%
Number of symptoms before taking the herbal product (Kerra capsule)			
	Asymptomatic	2,152	85.74%
	One	266	10.60%

		Number (person)	%
	Two	79	3.15%
	Three	12	0.48%
	More than three	1	0.04%
	Total	2,510	100.00%
Recovery time			
	1 day	1	0.04%
	2 days	15	0.60%
	3 days	54	2.15%
	4 days	50	1.99%
	5 days	1,183	47.13%
	6 days	185	7.37%
	7 days	362	14.42%
	8 days	135	5.38%
	9 days	110	4.38%
	More than 9 days	415	16.53%
	Total	2,510	100.00%
Side effects			
	None	2,500	99.60%
	Diarrhea	5	0.20%
	constipation	5	0.20%
	Total	2,510	100%

	Number (person)	Percentage
Referral for further treatment and deaths		
Referral	0	0.00
Deaths	0	0.00
Total	0	0.00

Table 2 depicts the general characteristics of 2,510 cases of patients infected with COVID-19, who were in home isolation and received herbal product (Kerra capsule). The patients were classified by symptoms before receiving the Kerra herbal capsule, most of the patients (1,540 patients, 61.35 percent) had a fever, followed by 1,402 patients (55.86 percent) experiencing a cough. Nine hundred seventy-seven patients had a sore

throat (38.92 percent), 693 patients had rhinorrhea, accounting for 27.61 percent, 562 patients had body aches, (22.39 percent), 413 patients (16.45 percent) experienced the loss of smell, 321 patients (12.79 percent) experienced the loss of taste, 206 patients (8.21 percent) experienced headache, 71 patients had fatigue, accounting for 2.83 percent, 35 patients had diarrhea, that is equivalent to 1.39 percent, 6

patients (0.24 percent) had conjunctivitis, and 2 patients (0.08 percent) had skin rashes.

For the data classified by the number of COVID-19 symptoms before receiving an herbal product (Kerra capsule), we found that most of them (2,152 patients, 85.74 percent) were asymptomatic. There were 266 patients (10.60 percent) had 1 symptom, 79 patients (3.15 percent) had 2 symptoms, 12 patients (0.48 percent) had 3 symptoms, and 1 patient (0.04 percent) had more than 3 symptoms. In terms of the time of recovery, we found that the majority of patients which is 1,183 patients or 47.13 percent recovered at 5 days, followed by 362 patients who recovered at 7 days, accounting for 14.42 percent, 185 patients recovered at 6 days, equivalent to 7.37 percent, 135 patients recovered at 8 days, equivalent to 5.38 percent.

When data was classified by side effects, a total of 2,500 patients or 99.60 percent did not experience side effects, 5 patients (0.20 %) had diarrhea, and 5 patients, or 0.20 percent had constipation. There were no referrals or deaths out of 2,510 patients.

DISCUSSION

In conclusion, in this study, we aimed to investigate the effect of the herbal product (Kerra capsule) on the clinical characteristics of COVID-19 patients who were isolated at home during July and August 2021. A retrospective study was undertaken with 2,510 COVID-19 infected individuals who tested positive for the virus in Pathum Thani Province and were treated with medicinal herbs (Kerra capsule) before self-isolating under the supervision of Prachathipat Hospital. Participants of the study were in all age groups (4 months to 101 years old). The age group of 18-59 years old represents 78.37 percent. Four hundred sixty-two patients had underlying diseases. There were 153 patients with hypertension which is the majority of those with underlying diseases, accounting for 33.12 percent. Our results showed that the majority of COVID-19 patients had a fever as a symptom before receiving the Kerra herbal capsules (61.35 percent) and

consumed the Kerra capsules during home isolation. Most of them (2,152 patients, 85.74 percent) were asymptomatic. It was interesting that the majority of patients (51.91 %) recovered within 5 days after receiving the herbal product. There were no side effects on 99.60 percent of patients, and there was no referral or death report in this study.

Our study related to the studies in the treatment of COVID-19 respiratory symptoms with herbal herbs to improve the immune system or cure respiratory disorders. Medicinal herbs, natural materials, or preparations with antiviral and anti-inflammatory qualities have been used (Villena-Tejada et al., 2021). Traditional medicine is being used to combat COVID-19 in countries such as China, India, Bolivia, Morocco, Nepal, Peru, and Brazil (Villena-Tejada et al., 2021). There was widespread use of medicinal plants for both prevention and treatment, which was linked to the number of demographic factors and whether or not respondents had COVID-19.

In Thailand, natural product-based therapies have a lot of interest. The use of Thai traditional herbs, particularly their phytochemicals, has been shown to have broad-spectrum anti-cancer, anti-inflammatory, antioxidant, and antiviral properties. This points to their suitability as anti-SARS-CoV-2 candidates.

Andrographis paniculata (*Andrographis*) is one of the most extensively utilized herbal products for a variety of indications (Sa-Ngiamsumtorn et al., 2021). The anti-SARS-CoV-2 effectiveness of *Andrographis paniculata* extract (the main component is andrographolide) as effective medication against SARS-CoV-2 infection was determined *in vitro* in a study of an herbal product (Sa-Ngiamsumtorn et al., 2021). However, patients receiving *Andrographis paniculata* have reported hypersensitive reactions. This is a potential risk that healthcare providers should be aware of. The hypersensitivity reactions should be addressed when using *andrographis* products (Suwankesawong, Saokaew, Permsuwan, &

Chaiyakunapruk, 2014). Furthermore, the anti-SARS-CoV-2 activity of *Boesenbergia rotunda* extract and its phytochemical component, panduratin A, was reported to be inhibited (Kanjanasirirat et al., 2020). However, there was no report on the patient study.

Interestingly, we proposed Kerra Capsule as a potential herbal product which is the Thai traditional herbal recipe that originated from the Taksila scriptures in the royal medical textbook in the reign of King Rama V (P.S. Sangkroh, 1907). The recipes consist of several kinds of herbs following Kaen Chan Daeng (*Dracaena loureiroi*), Kaen Chan Khao (*Tarenna hoensis*), Catathea (*Schumannianthus dichotomus*), Gac Root (*Momordica cochinchinensis*), Lemon root (*Citrus aurantifolia*), Sakae root (*Combretum quadrangulare*), Kra Tung Root (*Dregea volubilis*), Bai-ya-nang (*Tiliacora triandra*), and *Tinospora cordifolia* (*Tinospora crispa*). These herbs help to reduce heat, cure fever, cure cough, reduce headache, eliminate phlegm, nourish lymph, boost the immune system, reduce restlessness, reduce inflammation, pain, and swelling, and improve heart and blood circulation (Sun J, et al., 2019, and Banskota AH, et al., 2000 and Singthong J, et al., 2014).

Our previous studies were conducted *in vitro* to test the efficacy of the Kerra extract to inhibit the enzyme Covid-19 main Protease of SARS-CoV-2 found that Kerra extract can inhibit SARS-CoV-2 main protease (Choowongkamon, K., 2021a), and RdRp of SARS-CoV-2 (Choowongkamon, K., 2021 c). Kerra extract can affect the anti-inflammatory activity of macrophages (Choowongkamon, K., 2021 b). Moreover, Kerra extract can inhibit intracellular virus activity in Crandell Rees Feline Kidney Cells (CRFK) (Choowongkamon, K., 2021 d). For the cytotoxicity test, there were no serious side effects were reported such as diarrhea and dizziness due to a very low amount or no toxic substances according to the standards of the Thai Herbal Pharmacopoeia 2018, and the acute toxicity of Kerra capsules tested in rats are at very low levels. All of the above, the Kerra

capsules were considered safe and may be able to reduce the severity of COVID-19 infection and lower mortality rates.

CONCLUSION

Most COVID-19 patients in home isolation who received Kerra capsules could recover from COVID-19 within 5 days. The Kerra herbal capsules were effective to treat COVID-19 in all age groups; children, adults, and also patients with underlying diseases such as diabetes. All of the patients in this study were no referrals or deaths during the home isolation. Kerra herbal capsules may serve as promising candidates for therapeutic purposes with economic advantage during the COVID-19 situation.

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DECLARATION OF INTEREST

All authors declare no conflicts of interest.

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