



Effective Medicine Treatment for Corona Patients at Home in COVID 19 Pandemic - and Roles of Nurses and Doctors for Heart Failures Treatment Attached

**Vu Thanh Binh¹, Dinh Tran Ngoc Huy^{2,3*}, Pham Thi Bich Ngoc⁴,
Pham Thi Hong Nhung⁵, Dinh Tran Ngoc Hien⁶ and Ngo Huy Hoang⁷**

¹Thai Binh University of Medicine and Pharmacy, Vietnam.

²Banking University, HCM City Vietnam – GSIM, Vietnam.

³International University of Japan, Niigata, Japan.

⁴Nursing and Midwifery Faculty, Nam Dinh University of Nursing, Vietnam.

⁵Nam Dinh Provincial General Hospital, Vietnam.

⁶Technical University HCM City, Vietnam.

⁷Nam Dinh University of Nursing, Vietnam.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

In the case of developing countries such as Vietnam, we will have a new approach of attacking corona virus and help patients at home with effective medicine treatment solutions as presented in this paper, it will help other nations as well and they can use it as reference.

Authors will use qualitative analysis and experience and expertise from experts to explore this solution.

Our study results show that there are several methods to treat corona patients at home effectively

and that are tested in some countries including Vietnam. Currently Vietnam is testing Molnupiravir and other methods of treatment which will be presented, while WHO and Japan also have other approaches as presented in the study. Last but not least, authors suggest treatment of heart failures attached for patients and self-care knowledge for these patients.

Keywords: *Effective medicine treatment; corona virus; covid; patients.*

1. INTRODUCTION

For patients with both corona infected, and patients with heart failures attached, knowledge of self-care is important, so we conduct this study to support patients for self-care treatment [1-4].

Self-care is a very important aspect of chronic heart failure treatment. The European Society of Cardiology emphasizes the importance of self-care as part of successful treatment and enhances self-care by providing educational programs that can relieve symptoms, disease severity, improve health, reduce the risk of re-hospitalization and improve quality of life [5-10]. Encouraging self-care is one of the main goals of educational interventions for patients with chronic heart failure. Health education is the primary task of nurses in taking care of patients in hospitals [11-13]. Health education for patients with chronic heart failure has helped them gain a significant understanding of heart failure and self-care in chronic heart failure but most patient education programs emphasize this knowledge. Disease awareness and lack of information on how to manage symptoms or improve self-care [14-17].

The scope of this study includes:

Issue: What are the methods to treat corona for patients at home effectively and that are tested in some countries including Vietnam?

2. METHODOLOGY

To serve for The purpose of the study, authors mainly use combination of quantitative methods and qualitative methods including synthesis (for analyzing overall situation of covid 19 below section), inductive and explanatory methods combined with observations (this is for self-care treatment of covid 19 at home in below section we explain more).

One-group intervention study design with before-after comparison. Health education intervention was carried out for 90 patients with chronic

heartfailure inpatient treatment at Cardiology Department - Nam Dinh General Hospital.

2.1 Next we Look at Overall Situation of COVID 19 in Vietnam and the World

In Vietnam:

Vietnam still among the countries who can control Covid situation very best with lots of efforts from the government and Ministry of Health, hospitals, local authorities and securities force.

Vietnam has received lots of supports (vaccine covid 19) from international friends: Czech republic, Poland, Romania, US, Japan, Germany, etc.

According to statistics, Situation of treatment of patients with COVID-19:

Number of recovered patients:

- The patient was declared cured within the day 30/8/2021: 8,813, bringing the total number of cured cases: 219,802 cases.

(Source: <https://moh.gov.vn/tin-tong-hop/> [18], access date 30/8/2021)

In the world, As of 6:00 am on August 30 (Vietnam time), the whole world has recorded a total of 217,172,371 cases of COVID-19, including 4,514,131 deaths. The number of new infections in the past 24 hours was 590,772 and 9,780 new deaths.

The number of recovered patients has reached 194,059,798 people, 18,598,442 patients are being actively treated and 113,501 are in critical condition.

In the past 24 hours, India leads the world with 43,381 new infections; followed by the UK (33,196 cases) and Iran (31,516 cases). Russia topped the number of new deaths with 797 deaths, followed by Mexico (756 cases and Iran (581 cases).



Địa điểm	Số ca ↓	Số ca từ vong
 Việt Nam	707 N	17.545
 Hoa Kỳ	42,5 Tr +130 N	680 N +2.366
 Ấn Độ	33,5 Tr	446 N
 Brazil	21,2 Tr	591 N +485
 Vương Quốc Anh	7,5 Tr	135 N

Fig. 1. Number of corona patients in several countries the world (“+” means new patients)
(Source: wikipedia)

The US, India and Brazil are still the three most severely affected countries in the world. The number of infections in the US so far is 39,664,552 people, including 654,682 deaths. India recorded a total of 32,737,569 infections, including 438,387 deaths. Meanwhile, Brazil ranked third with 20,741,815 cases and 579,308 deaths. See Fig. 1.

According to Mr Tedros, from WHO: Tedros warned that at the current rate of disease spread, the world could surpass 300 million infections by early next year. However, the WHO leader said that the world can still avoid this scenario when there are now many tools to prevent, test and treat.

3. MAIN RESULTS

3.1 Several Medicines Solutions at Current Time in Some Nations

Currently in the world, Remdesivir is an antiviral drug approved by the US Food and Drug Administration (FDA) to treat COVID-19 patients from 22/10/2020.

With the ability to shorten treatment time and speed up recovery in critically ill patients, Remdesivir has been included in the treatment regimens by 50 countries such as the US, EU, Australia, Japan, Singapore, India... and is one of

the world's leading hard-to-access specialty drugs.

In Japan, the government is going to test and approve: Remdesivir and Avigane medicine.

3.1.1 Remdesivir

Remdesivir is originally a drug developed by Gilead to treat Ebola virus. The drug works to prevent the virus from replicating in the human body.

On May 1, the US Food and Drug Administration authorized the emergency use of the drug to treat patients infected with corona virus. A clinical trial in the US showed that patients taking this drug recovered 4 days faster.

3.1.2 Avigan

Avigan, the trade name of the drug Favipiravir, is a flu medicine. The drug was prepared by the Japanese pharmaceutical company Fujifilm Toyama Chemical 6 years ago.

Like remdesivir, Avigan has been shown to effectively inhibit viral replication. Avigan is certified in Japan as an anti-influenza drug. However, animal testing has shown that the drug has adverse effects on the embryo.

(Source: <https://www3.nhk.or.jp/nhkworld/vi/news/backstories/1075/>, access date 30/8/2021).

Beside, WHO said about the trial of Solidarity PLUS with three drugs, artesunate, imatinib and infliximab, was selected by an independent panel of experts to study its ability to help reduce the risk of death in hospitalized Covid-19 patients.

Artesunate is currently used to treat severe malaria, imatinib for certain cancers, and infliximab for immune system conditions, such as inflammatory bowel disease and rheumatoid arthritis.

The WHO said that in the framework of the clinical trial, the drug Artesunate - manufactured by Ipca (India) - will be injected intravenously into patients for 7 consecutive days, with the standard recommended dose similar to the treatment of severe malaria. . With Imatinib - made by Novartis (Switzerland) - the patient takes it once a day for 14 days. Meanwhile,

infliximab - made by Johnson and Johnson - will be injected into the patient's vein in a single dose.

(Source: <https://nld.com.vn/thoi-su-quoc-te/who-cong-bo-thu-nghiem-3-loai-thuoc-dieu-tri-covid-19-20210812085156098.htm> [19], access date 30/8/2021)

3.2 Effective Medicine Treatment for Patients COVID at Home

There are at least 2 effective methods of medicine treatment for patients in nations with corona virus at home as we present follows:

A. First treatment solution

We introduce this method as in Vietnam case, doctors are testing it:



Fig. 2. Testing medicine molnupiravir for corona patients

(source: internet. Retrieved from <http://www.hanoimoi.com.vn/tin-tuc/Xa-hoi/1010236/thanh-pho-ho-chi-minh-dua-thuoc-monulpiravir-vao-dieu-tri-covid-19> [20], access date 23/9/2021)

Molnupiravir (a medicine, developed by Drug Innovations at Emory (DRIVE), LLC, a non-profit biotechnology company wholly owned by Emory University and being developed by the American pharmaceutical company Merck in partnership with the German company Ridgeback Biotherapeutics) is an antiviral drug (from the same "family" as Remdesivir, which has been approved for the treatment of COVID-19).

B. Second treatment solution

Further Analysis of Treatment Solutions for Patients with Covid 19 and with heart failures

First, Taking medication as prescribed by your doctor is the best way to protect your heart and fight the complications of COVID-19 if you do get sick. Even if your symptoms have subsided, you should not reduce the dose or quit on your own because that can cause your heart rate to rise again.

Because the epidemic may still last for a long time, it is necessary to store enough medicine for a few months. Please check all your prescriptions, contact your doctor to get a prescription for a 2-3 month supply.

Then, second, Keep blood pressure and blood fat within target limits

Keeping your blood pressure within your target range will help you better stabilize your heart rate. In case you are taking statins - continue taking them and stop only with your doctor's approval. Many reports show that the use of this group of drugs in patients with coronary artery disease and dyslipidemia can better reduce cardiovascular risks during the COVID-19 epidemic season.

Third, take fever-reducing medicine when the fever is over 38.5 degrees

Regardless of whether you have a fever due to the SARS-CoV-2 virus or a fever from other causes, you need to take fever-reducing medicine (preferably Paracetamol) to lower your body temperature. Because when high fever or infection can cause arrhythmia in people with pre-existing cardiovascular disease, dangerous for the patient.

Fourth, listen to your body to recognize abnormal signs of COVID-19 early

Not everyone infected with COVID-19 also has a fever, cough, and difficulty breathing because it depends on the patient's resistance and medical condition. Especially in the symptoms of infection in patients with cardiac arrhythmias, the cardiovascular system is sometimes masked by underlying diseases.

(Source: *vientimmach.vn* [21], access date 14/8/2021)

Other treatment solutions for patients with COVID 19:

Stay at home: Most people with COVID-19 have a mild illness and can recover at home without medical care. Do not leave your home, except when you need medical attention. Do not go to public areas.

Take care of yourself. Rest and drink water regularly. Take over-the-counter medicines, such as acetaminophen, to help you feel better.

Stay in touch with your doctor. Call before visiting the doctor. Get medical attention if you have trouble breathing, or have emergency warning signs, or if you think it is an emergency.

Avoid using public transport, carpooling or taxis.

Monitor your symptoms

Symptoms of COVID-19 include fever, cough, or other symptoms.

Follow care instructions from your healthcare provider and local health department. Your local health authority will provide instructions on how to check your symptoms and report information.

3.3 Medicine Treatment for Patients Infected Corona Virus at Home Effectively

In this part, authors will suggest a medicine mechanism treatment for patients with corona virus at home effectively, based on their families' treatment experiences successfully as follows (Fig. 4).

We might note that medicine name Lianhua Qingwen jiaonang (Lien hoa thanh on) can be imported from China, to the country that it allows using it. The study, published in the medical journal *Phytomedicine* on May 16, was conducted by a group of leading experts including academician Chung Nam Son, head of a senior expert group of the National Health and Health Commission; epidemiologist Li Lanjuan, the Director of the National Key Laboratory for Infectious Disease Diagnosis and Treatment, and Zhang Boli, Dean of Tianjin University of Traditional Medicine.



Fig. 3. What you do if possible or confirmed COVID 19
(Source: vietnamese.cdc.gov, access date 14/8/2021)

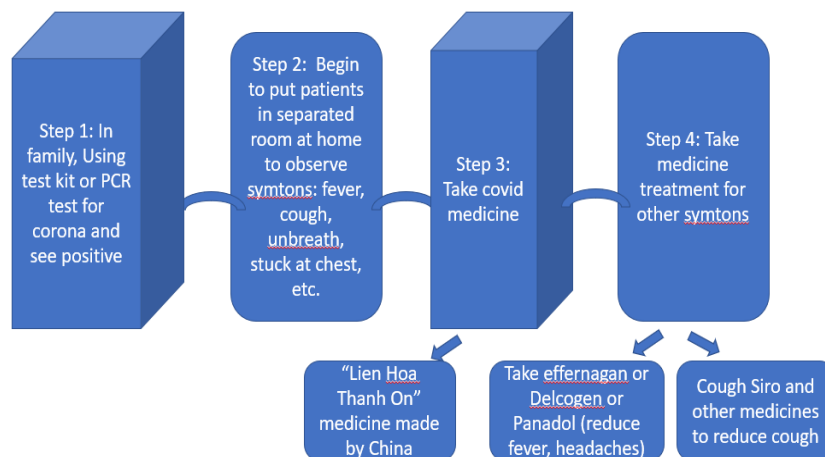


Fig. 4. Medicine treatment process for patients at home effectively
(Source: made by authors)

Lianhua Qingwen is a Chinese herbal medicine, the composition of which is honeysuckle flower, Japanese yellow bell flower and some other plants.

Next patients infected with corona can have other symptoms such as heart failures, that's why in next section we will propose treatment for patients with heart failures, from views of roles of both nurses and doctors.

3.4 Treatment for Patients with Heart Failures Attached

In this section, we will mention roles of doctors and nurses for treatment of patients with heart failures attached:

A. Roles and supports of nurses

According to an intervention study to improve self-care for heart failure patients in Japan (2016) by providing health education for patients with chronic heart failure inpatient treatment with materials prepared from accompanied by a leaflet describing the behavior of care. This study showed that there was an improvement in patient's self-care behavior after 1 month of intervention [22-26]. This study followed patients for 2 years and the results of univariate or multivariate regression analysis both showed that health education reduced the rate of re-hospitalization and death from heart failure. Rahbari et al. [27] conducted study on blood flow containing nanoparticles through porous blood vessels is done in presence of magnetic field using Homotopy Perturbation Method (HPM). Blood is considered as the third grade non-Newtonian fluid containing nanoparticles. Fakour et al. [28] said the stream function decreases with increase of Reynolds number and velocity boundary layer thickness decreases as Re increases. Huy, D.T.N [29] stated better management standards is needed for enterprises and hospitals included. Fakour et al. [30] stated the impact of some physical parameters like unsteadiness parameter (S), Prandtl number (Pr) and the nanoparticles volume fraction (ϕ) on the temperature and velocity profiles is scrutinized carefully.

Thus, nursing care for chronic heart failure patients to enhance self-care is proven to be effective in improving self-care scores, thereby reducing re-hospitalization and improving quality of life [31,32]. However, behavior improvement has been shown to be much more difficult than cognitive change, and the ability to engage in

behaviors conducive to disease control depends on many factors such as habits, living conditions, etc. This explains the fact that in our study and a number of other intervention studies, there were patients who achieved a post-intervention practice score of 70 points for each field, but the percentage of patients who passed in practice still modest. Here we would like to discuss some specific issues in 3 areas of self-care (maintenance of care, care management and self-confidence) of patients with heart failure before intervention and changes after intervention:

In the practice of maintenance care:

Regarding self-monitoring of weight: in our study, at baseline, the practice of patients with self-monitoring of weight was not good with more than half of patients (51.9%) not or rarely monitored weight and only very few patients (2.4%) monitored weight daily. This result is similar to the study of Nguyen Thi Hong Hai [33] with 45.5% of patients "disagree" with daily weight and 2.5% of patients "strongly agree" with daily weight. However, the rate of NB monitoring daily weight in foreign countries is much higher than in Vietnam. Specifically, according to the study of Wal MH et al. [34-36], up to 35.0% of patients monitor their weight daily. The reason for this difference is probably because Vietnamese people in general and chronic heart failure patients in Vietnam in particular rarely monitor their weight. After being studied by the GDSK research team, the self-monitoring behavior of weight has changed.

Shown in the proportion of patients who do not or rarely monitor weight has decreased from 50.9% to 20.0%; The number of patients who occasionally self-monitor their weight increased from 25.9% to 61.1%. It shows that after GDSK, the majority of patients understood the importance of weight monitoring for their heart failure status.

Regarding the behavior of periodic examination: before the intervention, 14.8% of patients did not or rarely had periodic examination. After 1 month of medical education, the proportion of patients who occasionally and often go to the doctor for regular check-ups is 83.3%. The explanation for this rather high rate may be that the patients participating in our study were scheduled to be re-examined and called to remind them of the follow-up examination, which may also affect this result.

Regarding salt-reduced eating behavior: before the intervention, only 11% of patients used to eat less salt every day, the rate of patients who sometimes ate reduced salt was 42%. This result is similar to the results in the study of Nguyen Thi Hong Hai [33] with the percentage of patients agreeing to "I eat blandly" is 43% and in the study of Kieu Thi Thu Hang [37] studied on 120 patients. Heart failure admitted to inpatient treatment at the Vietnam Heart Institute found that 43% of patients did not follow the salt-reduced diet correctly. After receiving GDSK about the effects of a salt-reduced diet, the amount of salt that heart failure patients should consume daily, and foods high in salt and low in salt, the percentage of patients who performed a daily salt-reduced diet increased from 11% to 22%, patients regularly eat reduced salt daily reached 34.4%.

Regarding the behavior of forgetting to take a drug in the daily prescription: before the intervention, only a few patients (17.3%) did not or rarely forgot to take the drug, even more than half of the patients (53.1%). sometimes forget to take medicine. To explain this, a qualitative study on "Difficulty in self-care of heart failure patients at Nam Dinh General Hospital" by author Pham Thi Thu Huong (2018) has shown that: taking medicine also makes it difficult for patients. Due to the effect of diuretics "getting up to urinate ten times at night", it also affects the patient's sleep, and then there are patients who "go home and don't take medicine anymore" or "after being discharged from the hospital, after taking all the prescriptions, it's okay". Our GDSK intervention has emphasized taking adequate and punctual medication as one of the requirements for patients with chronic heart failure. Therefore, after the intervention, there was a marked change with the percentage of patients who did not or rarely forgot to take their daily medication up to 42.2% (increased 24.9% compared to before the intervention).

With the cut-off point of the maintenance care scale ≥ 70 points is considered to be achieved in maintenance care, before the intervention only 13 patients (accounting for 16%) achieved maintenance care. After intervention, this rate increased and 19 patients (accounting for 21.1%) achieved maintenance care. Although the difference is not statistically significant ($p > 0.05$), increasing the percentage of patients achieving maintenance care by 5.1% is a number of practical significance and especially for this reason. In the practice of nursing care, health

education for patients needs to be carried out regularly [38-41]. This is also one of the important tasks of the nurse in the process of taking care of the patient.

(source: Pham Thi Hong Nhung, Master thesis, 2018)

B. Roles of doctors

At Hospitals, first, Echocardiography for early detection of cardiovascular diseases.

The doctor will use a transducer that emits ultrasound waves to move over the skin of the patient's chest. The echoes will be recorded by the transducer and transmitted to a projection screen to help the doctor see the current activity of the heart directly.

Specifically, you will know:

- How the heart works and contracts.
- Moving heart rate per minute
- Changes in the shape and size of the heart.
- Pumping movement of the walls of the heart.
- The pumping power of the heart to the organs and the volume of blood pumped in the heart per minute.
- The activity and the widening or narrowing of the heart valves.

With echocardiography, doctors will soon detect cardiovascular problems such as myocardial infarction, heart valve regurgitation, heart failure, etc., so that the patient is known and treated as promptly as possible.

Second, doctors will provide patients with:

Heart failure examination, patients will receive: Cardiology Specialist Examination (by appointment)

Perform tests such as:

Total peripheral blood cell analysis (by laser counter).

Glucose quantification

Cholesterol quantification.

Triglyceride quantification.

Determination of HDL-C (High Density Lipoprotein Cholesterol).

Determination of LDL-C (Low density lipoprotein cholesterol).

Quantification of Creatinine.

Urea quantification.

Measure AST activity (GOT).

Measure ALT (GPT) activity.

4. DISCUSSION AND CONCLUSION

We also recommend supporting solutions:

Beside, patients need to practice self-care at home: Self-care knowledge is the patient's understanding of areas of self-care. According to the study of Artinian et al., knowledge of heart failure patients includes: understanding of heart failure and its symptoms, reasons for symptoms, worsening of symptoms; salt-reduced diet; knowledge about drugs and how to use them; fluid knowledge; knowledge about weight monitoring, exercise, or symptom control.

Self-care practices are behaviors that help patients maintain their physical condition, monitor signs of illness (maintain care), and recognize and respond appropriately to changes or symptoms of heart failure, and evaluate its effectiveness (management of care). Maintenance of care includes activities such as medication, exercise, salt and fluid restriction, weight monitoring, edema, dyspnea, preventive behavior, and routine examinations.

For patients with heart failures:

People with cardiovascular disease should see a doctor and use drugs as prescribed by a doctor to avoid acute cardiovascular complications.

However, cardiovascular patients and their loved ones should be alert, not bewildered and should know how to self-monitor the progression of the disease.

Moreover, Pham Thi Bich Ngoc, Dinh Tran Ngoc Huy, Pham Thi Hong Nhung (2021) mentioned that In nutrition and food policy for patients with heart failures, we need to reduce natri in food and increase fiber-rich food such as whole grain and bean, etc.

For patients with corona infection:

They need to follow our treatment options as presented above, together with good fruites (orange, lemon,...) and take medicine (Delcogen, Panadol, Effernegan, cough siro...) to treat other symtons (fever, cough...).

5. LIMITATION OF RESEARCH

Limit the quantity and quality of data that affect results.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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