

Original Article: Crisis Management in the Face of Covid-19 to Control Drug Chemistry for Cancer Patients in Different Countries: A Review Study



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ABSTRACT

The present study is a PICO review, discussing the crisis management strategies in the face of Covid-19. The reviewed documents were searched in Google Scholar, Sid and Mag Iran databases using the keywords management, Covid-19, control, crisis. Based on studies conducted by many hospitals, health and care networks have planned on how to deal with and increase capacity, recruit staff, use new infrastructure, and make optimal use of resources. Accident goals and programs are also presented, especially in intensive care units, including the establishment of an acute care surgeon, the proposed infrastructure, patient transfer, the principles of triage, convalescence, and the establishment of a full-time intensive care physician. Quality Improvement Management and Crisis Management of The Most Basic Action was to comprehensively assess the hospital from the hospitalized patients and prepare the wards for the reception of Covid-19 patients and close the clinics. This strategy assisted to free the beds and the ability to hospitalize patients with Covid-19 and the rapid start of treatment in patients. Countries also consider it important to follow up with families of infected people in order to break the transmission chain. The most effective prevention and control measures are to find suspicious patients and close contact, confirm patients and carriers of the virus, and block transmission through isolation, disinfection, and personal protection. Therefore, early diagnosis, isolation and treatment of patients are the basic measures to control the source of infection and reduce the rate of infection.

Introduction

On December 30, 2019, the World Health Organization received an epidemic report of a pneumonia-like illness in Wuhan, China, and on January 7, it was identified by the Chinese authorities as the Covid-19 virus [1-3]. On January 30, 2020, the Director-General of the World Health Organization announced the emergence of a new disease. The current prevalence of this disease is considered as an emergency and a threat to public health at the international level. Following the outbreak, countries, including Iran, increased their planning and monitoring to quickly identify new possible cases of the disease and work to break the transmission chain. The United States, Italy, China, Spain, Germany and Iran are among the countries with the highest number of Covid-19 conflicts [4-7].

Many countries face unprecedented managerial challenges in the face of Covid-19, the pressure on governments is severe, and its negative impact on the people lives around the world is increasing. Many in the community are also looking for ways to manage and apply the principles of transparency, accountability and participation in solving problems related to Covid-19. In this regard, the World Health Organization (WHO) recommends six basic measures [8-11]:

- Expand, train and deploy healthcare staff to expand public health.
- Implement a system to find any suspicious items at the community level.
- Increase production levels, increase capacity and availability of coronavirus testing.
- Identify and equip facilities for treatment and quarantine of patients.
- Develop a clear plan and process for quarantining suspects.
- Focus on prevention and control [12].

The structure of the corona virus and the mechanism of infection scientists are moving fast in describing Covid-19 and sharing their

research findings with the international community of researchers as soon as possible [13-15]. An important example of this research is the new coronavirus cysteine protease homology models. Rapid access to corona genomic data made it possible to produce first-generation homologous models for 3CLpro cysteine protease. An enzyme that is important for viral replication and has previously been studied as the target of antiviral therapies in the treatment of SARS as another coronavirus. This version demonstrates that although the viral genome closely resembles that of bat corona viruses, the protease most closely resembles the SARS corona virus protease shows that the virus entered the human population through another animal (civets) [16-19].

Huang et al. [19] (2016) used crystallographic and biophysical methods to identify the structural and functional properties of HKU9-RBD (bat-borne coronavirus that has not been transmitted to humans). The main reason for these studies was that beta-coronaviruses (a type that includes SARS and MERS) should be well identified if they lead to the next global epidemic [20-22]. After comparing the virus-binding domain (RBD) of this virus with the existing structures of SARS, MERS and HKU4 (another coronavirus of bats), it was found that cognitive-receptors are difficult despite the existing knowledge of the evolutionary history of RNA viruses [23-25].

In this study, coronaviruses showed several structural models in a specific subset of proteins called spike proteins. Recent studies have shown that coronavirus coronavirus-19 also belongs to the same group of proteins [26-28].

Spike proteins present on the surface of the virus are a key factor in the detection of receptors and play a role as part of the mechanism of membrane penetration and infection [29]. The researchers found that the S protein from beta-coronaviruses originated from a common ancestor and evolved in the outer region of RBD, which determines the virus's potential for transmission between different species [30-33].

Lee *et al.* (2015) screened more than 25,000 compounds from the MERS and SARS

coronaviruses to find a small dual inhibitory molecule for papain-like protease enzymes (PLpro) enzymes and were able to synthesize a compound with inhibitory activity against both. Interestingly, despite the fact that these two enzymes have significant similarities in their overall structure and catalytic sites, the identified compound acts as a competitive inhibitor against the MERS corona virus, whereas against the SARS corona virus [34-38]. Acts as an allosteric inhibitor. In addition, although the inhibitory properties of the compound may be different for these two types of viruses, the inhibitor for both was more than two select human homologues.

Although none of the four lead inhibitors tested on the SARS coronavirus were effective against MERS, a dual-function inhibitor was identified for both papain-like proteases for SARS and MER. Treatment methods Extensive research is underway to find antiseptic drugs for previously known coronaviruses as well as 2019-nCoV [39-41].

A review study by Morse *et al.* (2020) discusses possible prevention and treatment options for 2019-nCoV. There are four important enzymes that are essential for pathogenesis: the rod protein that facilitates the entry of the virus through the angiotensin-converting enzyme into the host cell surface receptor, the main coronavirus protease 3CLpro, and the quasi-papain protease (PLpro), which assembles new viruses. RNA polymerase-dependent RNA (RdRp), which facilitates the replication of the coronavirus RNA genome.

The authors argue that the discrepancy between the Covid-19 rod protein with SARS may require the development of new therapies. The sequences of PLpro enzymes are both 83% common but do not differ in the components of their primary secondary constituents that make up their active sites.

Therefore, advanced inhibitors for SARS may be active against the 2019-nCoV enzyme. 2019-nCoV, SARS RdRp and 3CLpro share significant sequences, making it possible to use small drug molecules previously based on SARS-CoV proteins, such as Remdesivir and 3LCpro-1, to treat this new coronavirus. [42-45].

A more general review by Falcinelli *et al.* (2016) highlights the importance of clinical and fundamental research simultaneously in examining viral pathogens and developing new therapies. Vision Pillaiyar *et al.* (2016) provide an overview of chemotherapy for SARS coronavirus protease between 2003 (when SARS outbreak occurred) and 2015. Mehellou *et al.* (2018) examined the technology of ProTide in the treatment of disease. An approach that facilitates the intracellular delivery of nucleoside analog monophosphates and monophosphates. The GS-5734 protein produced by the Gilead Academy of Sciences was active against a wide range of viruses, including coronaviruses [46-49].

Schor and Einav (2018) discuss the use of existing drugs as broad-spectrum agents for the treatment of intracellular pathogens and note that kinase inhibitors such as imatinib and nilotinib corona inhibit viruses such as SARS and MERS. An article published in Chemistry and Chemical Engineering News discusses the efforts of pharmaceutical companies and biotechnology companies to develop rapid diagnostic and treatment methods for 2019-CoV [50-52].

A review of a research paper by Wang *et al.* (2016) suggests that one strategy to overcome the disease is to develop an anti-SARS vaccine that involves targeting a specific epitope of the virus rod protein [53-55].

Ion *et al.* (2019) reported the synthesis of aristromycin analogues as antiviral compounds capable of inhibiting RdRp proteinase from various RNA viruses and host cell S-adenosyl-L-homocysteine hydrolase [56].

Two papers by Ki Liu *et al.* (2018) present viral fusion inhibitors against coronavirus MERS. Kvach *et al.* (2019) reported the development of the first APOBEC3-like inhibitors as a way to enhance antiviral (and anti-cancer) therapies. APOBEC3, an enzyme that is part of the body's innate immune system, modifies genetic material derived from the pathogen, effectively defending against viral infection and thereby inactivating the virus. Utilizing similarities in the morphology of sites active in major proteases and 3C coronaviruses and enteroviruses, Zhan *et*

al. (2020) designed, synthesized, and described broad-spectrum antiviruses as peptidomic inhibitors of α -ketoamides. Evaluation of lead compounds against recombinant proteases in viral replication and in virus-infected cells has led to the discovery of the 11r compound, which exhibits potent anti-coronavirus MERS activity in human liver cells. Given the similarities shown by the MERS and Covid-19 coronavirus proteases, the authors suggest that the 11r compound may also be active against COVID-19 [57].

On April 28, 2016, the Covid-19 Conference was held in Geneva with the participation of more than 500 member countries at the initiative of the World Health Organization, during which the experiences, achievements and successful policies of China, Japan, South Korea and Singapore were presented [5]. Today, due to the high prevalence of Covid-19, governments must consider the appropriate budget, medical equipment, and treatment facilities to implement management decisions. In addition, the peace of mind of the people of the society is also important in the crisis of the disease, so the governments and affiliated bodies provide daily reports on the crisis situation.

Methodology

It is a review article supplemented by research based on observation and empirical documentation. This study was first conducted based on library studies and Internet searches in reputable databases such as Scholar Google, Direct Science, Pubmed, Science of Web, Scopus, and Advanced Google Search. Articles on the World Health Organization and the US CDC were also reviewed.

Select articles

A list of titles and abstracts of articles searched in the mentioned databases was prepared. Inclusion and study criteria are all descriptive-analytical-crisis management studies of Covid-19.

Exclusion criteria are as follows: Studies that did not have enough information and studies that did not have the full text.

Extracting the data

Based on the title of the article, the name of the first author, year of study, type of study and sampling method were extracted.

Findings

One problem in the United States and other countries is the lack of equipment because protective equipment is now used on a daily basis by health care professionals to protect themselves, patients and others when providing care. Strategies for optimizing the use of protective equipment, training in the use of personal protective equipment, and appropriate methods for sterilizing surfaces should be provided prior to patient care activities. In Iran, in the face of this crisis, manufacturing companies and factories producing medical and medical equipment and companies affiliated with the Ministry of Health, increased the production of medical equipment and personal protection to several times the previous production to meet the needs of the country. In addition, a number of non-governmental organizations spontaneously prepared masks and personal protective clothing. According to a study by Ross et al., [59-61].

The United States National Emergency Call was announced in March 13, in this call, many hospitals, health care networks planned on how to deal with and take action to increase capacity, recruit staff, use new infrastructure and make optimal use of resources. Accident goals and programs are also presented, especially in intensive care units, which include the establishment of an acute care surgeon, the proposed infrastructure, patient transfer, the principles of triage, convalescence, and the establishment of a full-time intensive care physician [62-64].

In Europe, crisis management is based on the principles of immediate separation of symptomatic or suspected individuals, prevention of gatherings, especially indoors, social distance, cancellation of unnecessary travel, closure of schools and educational centers, care for the elderly and children [65-

67]. China provides relevant medical equipment in a short period of time, including setting up outpatient and quarantine treatment centers with a capacity of 4,000 beds in a very short time, using national and regional facilities to increase the capacity to cover required services such as PCR to 35,000 samples in a day was able to optimize its infrastructure in disease control and reduce the number of visits to hospitals and intensive care units [68].

However, one of the problems in crisis management was the lack of sufficient evidence and political requirements to control and prevent the spread of the disease so that many plans were done in parallel and many costs were imposed on governments [69]. Previous studies have shown that at the time of SARS and Ebola, health care personnel were exposed to some of the most harmful psychological disorders, such as anxiety, fear, and anxiety. It should be noted that these results can severely affect the quality and performance of their activities and services [70].

Risks include exposure to the pathogen, long working hours, mental distress, fatigue, job burnout, insult and physical and mental violence. Therefore, it is necessary for health care workers to use N95 masks and protective clothing. Medical personnel should also follow prescribed occupational safety and health procedures, and avoid exposing others to safety and health hazards and participate in the training of occupational safety and health of employers [71].

Covid-19 management strategies in different countries

China

China bases its main strategies on an effective and coordinated social distancing system, compulsory quarantine solutions based on law and scientific findings and immediate interventions (including rapid patient detection, rapid reporting, rapid isolation, and immediate treatment). China has made significant progress in controlling the epidemic. In the Chinese epidemic, mobile field hospitals played an

important role in centralized patient management, thereby effectively reducing the transmission chain.

In order to break the transmission chain during the epidemic, China took a series of targeted three-step measures to combat Covid-19. The focus on preventing the spread of the disease in other cities meant that by the end of the first phase, the disease did not exceed four provinces. Report on the need for quarantine using simulations that showed that by limiting contact and communication of individuals and approaching the quarantine index, the number of infections decreased by 89.9%. Also, with implementing lockdown measures between the provinces, the incidence of the disease was reduced by 22%.

Therefore, early implementation, especially in the onset of the disease, is very effective, which unfortunately was not implemented in Iran. In this regard, the Chinese government, by using the quality improvement of communication management during the peak of the epidemic in the priority areas, provided the conditions for people to communicate only through WeChat and other online media.

Purchases were paid online and no one used cash to pay, which was reported to offices, agencies and guilds. Even general supplies such as water, food, etc. were provided online, and people were not forced to leave their homes for basic goods. Such a policy has not been implemented in Iran and this has led to many people still not observing social distance. However, instructions from the Ministry of Health on the need to observe social distance have been announced to all departments, agencies, classes and other sectors.

In line with the guidelines of the World Health Organization, the Ministry of Health has also announced the protocols for observing the standards of personal protection for health care staff and other high-risk jobs on the one hand and the general public on the other. Another key move by China was to form a team of five epidemiologists and follow up with tens of thousands of people and refer them for medical

examinations, which resulted in a positive test of 1 to 5 percent of the people followed [72].

Hong Kong, Singapore, Japan

The three main policies of rapid diagnosis of patients, improving the condition of intensive care units and empowering the service system to deal with acute respiratory patients were on its agenda and in addition to providing medical equipment and devices such as ventilators, ECMOs and community lifestyle improvements were other Japanese proposals. At the same time, Japan is working to reduce the effects of economic and social disasters, improve the quality of hospital services and increase special beds. The three countries of Hong Kong, Singapore and Japan, due to their geographical proximity and high social relations with China, were able to have good management to control the Covid-19 pandemic. This proper management strategy reduced the incidence and mortality of new coronaviruses in these countries. A strong monitoring system helped them to be able to respond quickly to prevention, identification, definitive diagnosis and treatment. Domestic and international travel control, along with numerous diagnostic tests, kept them in better condition than other countries for a long time.

In Singapore and Japan, lockdown was strictly enforced, but in Hong Kong, a 10-day quarantine for commuting was on the agenda. Prevention training was done seriously. Diagnosis, control and treatment were completely free and government-sponsored. In Singapore, regular meetings and communications were held to manage Covid-19 between health, political and military managers, its result is efficient integrated management. What complemented the efficient management of these three countries was their experience in dealing with the SARS epidemic and seasonal flu. One of the main strategies in Singapore is to enforce compulsory social distance as a rule, to empower service providers to manage inpatients and outpatients, and to support all health care professionals involved in prevention or treatment. Strengthening the management of private hospitals, supporting human service

providers, and establishing community-based isolated centers are also among Singapore's future plans [73].

Taiwan

Another example of an effective strategy is to control the Covid-19 pandemic. However, due to its geographical proximity to China and population density in some parts of the country, it was expected that the country would report high rates of infection and death due to Covid-19. However, their history of confronting SARS and establishing the National Health Command Center under the Accident Management Center complex led to the proper management and control of Covid-19 in this country.

In Taiwan, banning passengers from Wuhan, China, was the first effective step taken swiftly and decisively. The order not to export masks and control prices, as well as the distribution of masks and other health goods, came under the full control of the government. This was while at the same time and seriously increasing the production of masks, gloves, and detergents at the request of accident management. Differences between general wards, medical staff, and high-risk individuals were managed to use disease prevention tools. Public reports and tracking of suspects were conducted, in addition, the public was educated on the dangers of Covid-19 and the precautions for the new corona virus, which were effective in their effective strategy. This country prevented the increase of higher financial losses in this pandemic by investing a lot of financial resources [1].

America

Screening tests were performed for several weeks and only high-risk individuals were tested. The uncertainty to declare emergencies in various areas created many problems. The richest country in the world that trains epidemics every year; it lost a lot of time to use Covid-19 diagnostic kits. A large number of positive tests were reported in different states due to the large number of tests and the larger population in this country [13].

India

The world's second most populous country was severely exposed to Covid-19. There was great concern that the outbreak of the new coronavirus would be too high due to high population density in different parts of the country and poor health infrastructure. In fact, the prediction was correct and the spread of the disease was rapid, but due to low diagnostic tests, no significant statistics were reported.

In India, there are half hospital beds per thousand people, while in China, with similar demographic conditions, there are about 0.3 hospital beds per thousand people. Differences in the economic level in different parts of India and the negative impact of Covid-19 on the people's economy triggered a wave of migration, which is why the spread of the new coronavirus increased dramatically. Despite measures such as mandatory and strict quarantine, closing borders, closing educational, sports and religious facilities, however, favorable conditions for the management of Covid-19 were not reported in this country due to the lack of infrastructure and specific programs to deal with the epidemic [74].

South Korea

Prompt and fast screening using the primary health care system as well as the use of primary health care to treat mild cases is one of South Korea's main strategies. Also, people's participation based on transparency and open expression by the government, justice in public access to diagnosis and treatment without any discrimination based on gender, ethnicity and location, close cooperation between headquarters and local governments, epidemiological research, optimal use of resources and strengthening the care system It is also considered in the prevention and control of the disease [19].

Canada

At the beginning of the Covid-19 pandemic, Canadian authorities assumed that the spread and risk of the new coronavirus to Canada was very low, and health management did not focus on controlling Covid-19. The first case of Covid-19 was reported on January 21. Shortly afterwards, the Public Health Agency of Canada activated the Emergency Operations Center. Alerts were issued at airports and all flights from China were monitored and screened thoroughly. Non-Canadians were barred from entering and all flights were conducted to two designated airports. The policy of storing medicines and health items was put on the agenda of the Crisis Headquarters. With the increase in the number of infected people, all educational, sports and entertainment centers were closed, but restaurants and cafes provided services on a conditional basis [74].

Germany

The management of Covid-19 was carried out rigorously in Germany. A lower mortality rate was reported for Covid-19 in the country. Managers initially downplayed the threat of a new coronavirus to German society, and no travel restrictions were imposed. The first case of the disease was reported shortly after January 27, and all flights to China were suspended, fever-based screening was performed on all passengers, and all incoming visas were revoked. The government, with the help of parliament, changed the drug law to increase drug storage. A social distancing plan was implemented. But the special cases were the financial and technical assistance of car manufacturers for the production of masks and health items, which shows the comprehensive efforts to prevent and control Covid-19 in this country [75].

Italy

After Japan, Italy is the second country in the world in terms of average age. A large number of people over the age of 61 are at risk in nursing homes, which have received very limited attention. Although traffic from Wuhan, China

was suspended and a state of emergency was declared, a large number of deaths and illnesses were reported for Covid-19. In Italy, quarantine violations were punishable by fines and imprisonment, and military forces were used to control. All unnecessary public, sports, religious and municipal services were suspended. The use of thermal scanners was installed at the entrances of main and busy buildings [15].

New Zealand

The first case of new coronavirus was reported in New Zealand almost a month after Europe and North America. This case was transmitted by a person who traveled to Iran. One of the country's most effective measures was to close its borders quickly to prevent new coronaviruses from entering the country, and only citizens and permanent residents were allowed to enter the country. 10 days of quarantine were provided for all entrances and exits, even for asymptomatic people, as well as penalties for violating quarantine, including deportation. They set up a National Coordination Center to respond to the outbreak, which had control over the situation and decisions on its agenda. All centers that had the potential to mobilize people were closed and activities were suspended. New Zealand strictly enforced these severe restrictions for 0 weeks. The result of this careful control was that a limited number of Covid-19 deaths were reported in the country. The country is currently facing a declining number of new cases and a limited number of deaths. Complete and principled quarantine allowed the country to strictly enforce its internal restrictions and in fact, the main reason for the success of this country was the general population classification scheme for Covid-19 tests, which today has almost zero infected, and New Zealand has lifted all restrictions on the Covid-19 except for border control [25].

Iran

In Iran, since the outbreak of the disease, many plans for early diagnosis, treatment, hospitalization and recovery of patients, including the formation of a crisis team, preparation of guidelines and protocols,

screening of all households through the design of health systems and upgrades Apple System are done. Creating intelligent systems such as GIS system, which has obtained accurate statistics of the health status of each person in the community is another activity that can be used to perform better management actions. We will face many problems after the crisis period. One of the most important is the adverse economic effects on the family and society, so strategic management is very vital and important in determining effective strategies to go through this period and the post-crisis period. With mild, moderate and severe division within 24 hours by health care providers and in case of suspicion of referral to medical centers. This was the first epidemiological study of 19-COVID cases in Iran. Also, like other countries, in order to break the transmission chain, it is important to follow up the families of the infected person. In this way, from the time of diagnosis, this follow-up should be done at home once by disease control experts and the necessary training should be given to the family and those around them. Then, for 5 consecutive days and once on the fourteenth day of the family, the caregivers follow up by phone and check the condition of the patient and the family [39].

In Iran, due to the shortage and high cost of diagnostic kits, it is not possible to screen through public testing, and in order to screen suspects, follow-up is done by telephone from the head and family members, especially high-risk families. Then, their information and symptoms are entered in the Iranian health system and if they are suspected of having the disease, they are referred to medical centers. Informing the people and the health and medical staff is one of the priorities of managing this crisis. The media is a great tool for awareness. According to the protocols issued by the World Health Organization, instructions for people such as how to buy, how to care, how to disinfect surfaces, social distance and principles for health care staff such as personal protective clothing, how to deal with the patient Quid-19 and Its management, etc. are available, which must be observed. Also, the implementation of quarantine for sick people in the recovery period

is one of the mandatory cases and its violation is considered a crime [42].

In Iran, at the very beginning of the crisis, hospitals were identified as center in each city for referrals of patients with Covid-19 and suspected. After a short period of time, large convalescent homes were built in Tehran and some other cities to provide adequate health services to Covid-19 patients. With the spread of the disease and the increase in the number of referrals during the epidemic, the number of hospitals for admission of people with Covid-19 was increased and also in order to reduce the burden of hospital referrals, the number of comprehensive health centers as outpatient admission centers or 24- and 16-hour centers increased.

Also, with the participation of other sectors, sports spaces, hotels, commercial centers and exhibitions were used as the setting up of convalescents. In Iran, immediately after the announcement of the first case of Covid-19 disease, crisis management meetings were held and in addition to the need for participation of all departments, departments and agencies, classes, educational and research centers, etc. in disease prevention and control, the Ministry of Health And the treatment prepared a protocol and description of the duties of each organ in order to prevent, diagnose early and treat patients [55].

Turkey

Turkey, which has taken a similar action to Iran in the field of screening, but there is no reliable information about its success rate. Turkey closed its borders early in the outbreak. They have also been able to use this capacity to manage the control and prevent the spread of the disease, given the investments they have made in improving health care infrastructure, including the construction of hospitals and the expansion of the workforce since 2003. Even before 19-COVID began in this country, they planned to open ten new hospitals in the most populous areas in major cities. As a result of these investments, the percentage of beds in the intensive care unit in Turkey today is more than in European countries, the United States and

China. Also, all health services are free for all residents of Turkey and each of these factors can help deal with this unprecedented global crisis [71].

Hospital emergency management plan during an epidemic

Quality Improvement Management and Crisis Management the Most Basic Action was to completely evacuate the hospital from the hospitalized patients and prepare the wards for the reception of Covid-19 patients and to close the clinics.

This strategy helped to free the beds and the ability to hospitalize patients with Covid-19 and the rapid initiation of treatment in patients. In a study by Pan et al [8]. On the experiences of Sichuan Hospital, the medical center launched an emergency response program after the announcement of the Corona crisis and at the same time, they formed several working groups, including the emergency team, the prevention and control team, the emergency medical team, the security and training team. And the establishment of a fever clinic was one of the most important measures of this hospital. The hospital also suspended all non-emergency admissions and stopped all non-emergency surgeries [42]. Initially, an online clinic was set up to facilitate patient triage. Through free online consultation, the hospital makes preliminary rulings on medical emergencies, non-emergency patients are advised to postpone hospital appointments or to visit other non- epidemics hospitals. Secondly qualified personnel refer to suspected patients and other patients prior to examination and triage for division.

Different patients are required to follow the specified procedures to enter the emergency department and to separate the space of the emergency medical department at risk. Third, the urgent need is of the highest priority. Hospital a command system able to create, mechanisms of effective coordination carried out, personal protective equipment and medical supplies to the emergency room offered, personnel triage and risk to personal protection

standard equipped, meetings and operations unnecessary canceled or postponed. He sent aid and emergency personnel from other departments to the emergency department [14]. In an annual study by Arabi *et al.* On the challenges of Covid-19 in medical centers, measures taken to control infection included: training staff, using personal protective equipment and N95 masks, disinfection and hygiene. Achieve and ensure sufficient supply chain, from manufacturer to front line [39].

An 8-meal diet rich in protein and vitamins for patients and staff is another measure to strengthen the immune system. In order to strengthen the employees' immune system, a multivitamin injection vial was infused for each of them.

Also, a safety measurement test was performed on all employees. The location of the changers was determined separately in all wards to prevent the spread of infection during the change of clothes. However, about 84 out of 1100 (5.6%) of the staff of Dr. Masih Daneshvari Hospital were exposed to patients with coronavirus disease, but fortunately none of them died and went through the course of the disease with different clinical manifestations from mild to severe.

Despite all the safeguards, the spread of the coronavirus is incredibly fast and from various reports around the world, it seems that various clinical manifestations still keep this type of coronavirus unknown. Failure to detect the virus in a timely manner can paralyze a medical center and cause severe economic damage. A study on effective strategies used to prevent Covid-19 disease was performed at KCG Hospital in Taiwan.

The measures taken in this regard included quick and early identification of suspicious cases and rapid implementation of preventive measures to control it, installation of infrared cameras in the entrances of hospitals and emergency departments to identify any person with fever. Visitors were also restricted and prevented from entering the hospital and only the entrances of the hospital from which the

personnel were allowed to enter were open and the other entrances of the hospital were closed. The role of training staff and physicians and human and financial resource management was also discussed in this study [63].

Strategies to prevent the spread of coronavirus at work place:

The first solution is to promote regular and thorough hand washing by staff, medical staff and patients. Therefore, place hand sanitizers at the main points and around the work environment and ensure that the containers are constantly filled with disinfectants. Posters of encouragement and reminders of how to wash your hands are displayed everywhere. Expand this with other communication activities, including providing guidance through health liaisons and occupational safety, meeting attendance, and information on the Internet. Ensure that staff, medical staff and patients have access to places to wash their hands with soap and water. Because washing removes the virus on your hands and prevents the prevalence of disease.

Encouraging good breathing behavior and well-being in the workplace is considered a second option. Advertising posters promote respiratory health. Combine this with other communication activities such as providing guidance through health and safety liaisons, briefing sessions, and network-related information, and more. Ensure that for those who suffer from runny nose or cough; masks or tissue are available at work and when sneezing or coughing in front of their respiratory tract well. Also, make sure that there are garbage bins in the workplace to dispose of used materials such as masks and tissue. Proper respiratory health prevents the spread of coronavirus. In the event of a virus outbreak, any staff with the slightest symptoms of the disease should stay home, even with a low cough or a mild fever. They should stay home and work if they are taking medicines such as paracetamol / acetaminophen, ibuprofen or aspirin, which may mask the symptoms of the infection. Finally, explain to employees that they can consider this time as sick leave [59].

Discussion

Examination of public recommendations in several countries indicates that all states recommend individual quarantine. Studies in different contexts have shown that the probability of performing a collective behavior increases in the presence of three components. People's cooperation with each other in a crisis will increase if the people are informed about a common strategy based on collective interests and have a strong group identity and for non-committers, reasonable penalties should be considered. These principles can be used in different dimensions of disease epidemics: Encouraged by people to follow the principles of health and home quarantine to dissuade them from nervous shopping and fear of strangers.

Conclusion

Since currently there is no cure for the prevention of the disease following measures to reduce the risk of Covid-19 and its management and transfer it to others based on the findings of Deng and Ping (2020) recommended:

- When sneezing and coughing, cover your mouth and nose with a tissue and immediately discard them and wash your hands.
- Wash hands with soap and water for at least 20 s; in the absence of soap and water, use disinfectants.
- Dirty hands should not be in close contact with your eyes, nose and mouth.
- It is recommended that all healthy and affected people wear masks.
- To prevent infection; Healthy people should be at least 1-2 m away from a person suspected of being infected with the virus.
- Avoid eating raw animal products.
- Suspicious and confirmed cases should be treated in hospitals that have effective isolation and protection conditions. Critical cases should also be treated as soon as possible in the intensive care unit.

- Rest in the bed, strengthen supportive care, ensure adequate energy; and maintain the stability of the indoor environment.

- Monitoring of blood status, urine status, reactive protein and health symptoms of liver enzyme, myocardial enzyme, renal function, coagulation function, arterial blood gas analysis, etc. If necessary, consider a chest x-ray.

- Depending on the change in oxygen saturation, timely treatment with oxygen is performed through a nasal catheter or mask. If necessary, high-current oxygen therapy should be performed through the nose, non-invasive or invasive mechanical ventilation, and so on.

- Avoid the blind and incorrect use of antibiotics, especially the use of a combination of broad-spectrum antibiotics. Strengthen bacteriological monitoring. Antibiotics should be used in a timely manner in secondary bacterial infections.

- If the condition does not improve, apply non-invasive mechanical ventilation for two hours or if no tolerability versus Non-Invasive Ventilation, along with increased airway secretions, severe cough or hemodynamically unstable, the patient on mechanical ventilation invasive referred in time.

- Improve microcirculation based on complete fluid regeneration, use vasoactive drugs and, if necessary, monitor hemodynamics.

- Depending on the extent of indigestion and the progress of chest imaging, use appropriate glucocorticoids for a short period of time (3-5 days).

- Ensure that the mask, disinfectant and other protective products available in the market are adequately prepared and standardize the market order.

- Strengthening oversight of public health, Health knowledge advertisements, and oversight of public places and key groups are essential.

- Comprehensive medical institutions and some specialized hospitals should be ready to accept patients of Covid-19 to ensure that severe and important cases are treated, diagnosed and treated in a timely manner.

• Health and treatment departments, public health departments and treatment centers in all provinces, cities, towns, wards, cities and streets and social organizations should work to prevent and control the epidemic and provide guidance to patients on disease prevention.

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