

MANAGEMENT OF NURSING SERVICES FOR CHILDREN WITH COVID-19 AND HOSPITALIZATION IN SPECIAL WARDS & OPERATING ROOM AND PSYCHOLOGICAL CONSEQUENCES IN THEM: THE ORIGINAL ARTICLE

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Abstract

Covid-19 has broken all records in the field of infectious and pandemic diseases. Both in terms of the number of infected and deaths, and in terms of the geographical extent and depth of the conflict and the damage it inflicts on the body of different countries in the world. This virus was not taken seriously at first and this was the beginning of all the adventures that have involved the world in these few months. Every day, researchers make new findings about Corona, and in some cases, these findings are miles away from what we thought. In the difficult situation that the whole world is struggling with, along with the knowledge and efforts of experts and researchers, the serious determination of people to help break the transmission chain is very important and vital. Although there are notable exceptions, most evidence suggests that the risk of Covid-19 is much lower for children than for adults. Knowing the symptoms of corona in children can help parents and nurses to recognize the emergency warning signs and seek appropriate treatment. This article covers the symptoms of the corona virus in children, some possible complications and when to see a pediatrician. Data collected from China and the United States on children infected with SARS-CoV-2, the virus that causes Covid-19, suggests that the risk of severe disease in children is lower than in adults. According to a study of 2752 children infected with Covid-19, only three died, and the main cause of death in each case is being investigated. Recent evidence suggests that hospitalization rates are higher among infants and some require treatment in the intensive care unit. More than 90% of children in China did not have any symptoms after contracting the corona virus and suffered from a mild illness.

Introduction

Children and even babies are infected with the corona virus like adults. The symptoms of Covid-19 in children are milder, but they are similar to the symptoms of adults [1-3]. Symptoms are similar to a cold, such as fever, runny nose, cough. The most important point that should be observed regarding children these days is the prevention and care of corona children. If you see symptoms such as lethargy, fever, cough and cold-like symptoms in your child, see a doctor [4-6].

Although by seeing these symptoms, it cannot be said that the child is 100% infected with Corona, but by going to the doctor and doing PCR tests and CT scan, you will be sure that your child is not infected with Corona and if he is infected, he is in the process [7-9]. The care of your child with corona virus is achieved quickly. Although diarrhea can indicate various problems and diseases, in general, mild or severe diarrhea that is associated with weight loss and loss of appetite of the patient can be a symptom of Corona [10-13]. Another point that should be taken into account regarding the occurrence of diarrhea as a sign of contracting Covid-19 is the loss of body water or dehydration. Because in this case, the possibility of intestinal infections also increases. In some people with corona, diarrhea continues for more than 5 to 7 days. In another group of corona patients, bloody diarrhea leads to concerns [14-16].

What are the stable symptoms of Corona?

Another important question that is raised about the symptoms of the corona virus is whether the symptoms of covid-19 can remain stable [17-19]. As mentioned, the complications and symptoms of covid-19 will be resolved after the recovery period, but some complications such as loss of sense of taste and smell take more time. The patient may face these problems for months. Also, some patients experience sleep disorders and hair loss [20-22]. The important question is why does the corona virus cause such complications? In response, it should be said that these symptoms and complications cannot be directly attributed to this disease (Figure 1). Scientists believe that fear and stress caused by the disease provide the basis for the occurrence of these symptoms. This disease is unknown and there is no specific treatment for it [23-25].

Figure 1. Protecting Children with Weakened Immune Systems



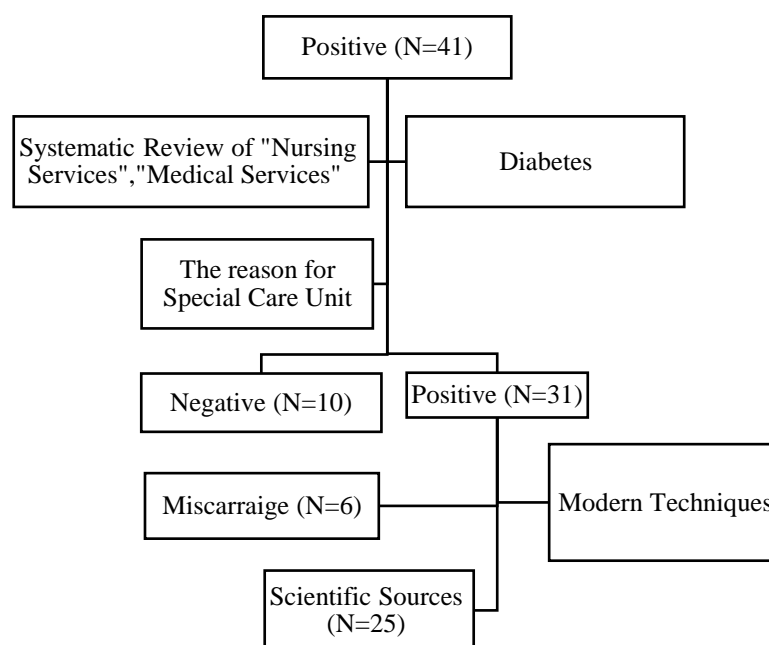
The corona vaccine does not provide complete immunity and the recovery period is relatively long, and the person is quarantined and away from his family during the illness, and most importantly, this disease has caused the death of many people since its appearance [26]. The combination of these factors will lead to severe stress and anxiety,

which can cause complications such as sleep disorders and hair loss. The good news is that the severity of these symptoms and complications will decrease with time. Therefore, Corona may affect you for a long time, but its signs and symptoms will not be permanent [27].

Search strategy and selection of articles

Search in Scopus, Google scholar, PubMed databases and by searching with keywords such as "Nursing Services", " Medical Services", " Diabetes" and "High Blood Pressure" to obtain articles related to the selected keywords [15-17]. Case report articles, editorials, and articles that were not published or only an introduction of them were available, as well as summaries of congresses and meetings that were in languages other than English, were ignored. Only the original research articles that evaluated the effectiveness of different drugs in the treatment of COVID-19 using standard methods were studied (figure 2) [18].

Figure 2. Flow chart of included subjects



Pay attention to the following points to take care of a corona virus child at home.

- ❖ Allocate a room to your child who has or is suspected of having corona. This room should have a proper ventilation system and be as far away from other rooms and people as possible [28].
- ❖ Move the child's toys and entertainment to the same room to minimize the child's movement to other areas of the house [29].
- ❖ One of the parents or one of the family members should be in contact with the child to solve his affairs. It is preferable to be someone who is less at risk of contracting corona in terms of age and underlying diseases. This person must wash and disinfect his hands after every contact with an infected child [30].
- ❖ Do not allow other people to visit the child until all the symptoms are removed from the child's body and you are sure that the disease has improved.

- ❖ If you want to be in the same place with the patient, keep a distance of two meters from the patient.
- ❖ To limit the secretions of the mouth and nose, the child must use a mask [31-33]. Also, the person who is responsible for taking care of the child must use a mask and a gown.
- ❖ If your baby is infected and the disease is so mild that it does not require hospitalization. If the baby is breastfed, the mother can pour her milk into the bottle using the shower head.
- ❖ If the mother has to constantly take care of the child due to her young age, it is better for her to stay away from other family members while taking care of the child. Also, follow the health protocols completely [34].
- ❖ It is better to wash and disinfect the blankets and sheets of children with corona in order to prevent the spread of the virus from others.
- ❖ The food given to the child should be suitable for corona disease and give him warm food such as soup.

Visiting the child to the doctor's office

One of the points that should be taken into account when caring for children with corona virus is when and how to see a doctor. Therefore, you should postpone some of your work in this situation so that you can take care of your child [35-37]. In order to know which visits to the doctor you can postpone and which are not necessary, in this situation you can use the telephone and internet medical services offered by many medical centers [38].

For some injuries and problems, you must see a doctor

- ✓ Illness and severe symptoms such as breathing problems, very high fever, insomnia or deep cuts.
- ✓ Children who are being treated for certain diseases such as cancer, kidney problems and rheumatological diseases. These types of treatments include chemotherapy, drug injection, dialysis or blood transfusion.
- ✓ Treatment of children under two years of age who need vaccination.
- ✓ Examination of children with special conditions such as breathing and lung problems and children with high blood pressure. Children with immune system problems and children who need stitches and such care [39].

Physical activity guidelines according to the World Health Organization

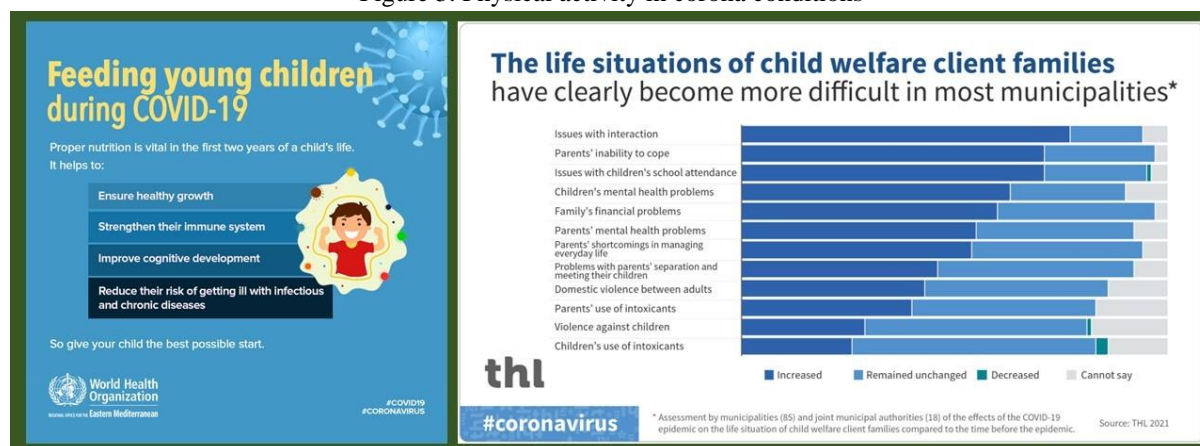
- ✓ Babies under 1 year old should be physically active several times a day.
- ✓ Children under 5 years old should have 180 minutes of physical activity a day.
- ✓ Children 3 to 4 years old should have an hour of moderate or vigorous activity a day.
- ✓ Children and adolescents aged 5 to 17 years should have at least 60 minutes of moderate to vigorous physical activity per day. This age group should do activities that strengthen muscles and bones at least 3 times a week.
- ✓ Adults aged 18 to 64 should get at least 150 minutes of moderate-intensity physical activity per week or at least 75 minutes of vigorous-intensity physical activity per week. This age group should do muscle strengthening activities 2 or more times a week.
- ✓ Seniors older than 64 years should have at least 150 minutes of moderate-intensity physical activity per week or at least 75 minutes of vigorous-intensity physical activity per week. This age group should do muscle strengthening activities 2 or more times a week [40].

✓ Seniors with weaker mobility should do activities 3 or more days a week that increase balance and reduce the likelihood of falling.

Physical activity in corona conditions

- ✓ Physical activity improves immune function and reduces inflammation. Therefore, it can reduce the severity of infections.
- ✓ Physical activity can reduce the prevalence of some underlying diseases, including type 2 diabetes and cardiovascular diseases. These patients are at a higher risk if they are infected with the disease of covid-19 and the prevalence of covid-19 complications is higher in these patients [41].
- ✓ Physical activity can act as a powerful stress control tool by reducing the symptoms of anxiety and depression.
- ✓ Stress and anxiety caused by the spread of the covid disease cause a disturbance in the cortisol level, which has a negative effect on immune function and inflammation.
- ✓ Physical activity can keep the cortisol level in balance (Figure 3).
- ✓ Having proper physical activity is one of the best ways to maintain a healthy mind and body [42].

Figure 3. Physical activity in corona conditions



Compliance with health principles in the stages of physical activity

- ✓ Let's go to the park and green space that is near the house. Because going a long distance to reach the park and green space may cause the spread of Corona.
- ✓ On long distances, we may stop along the way, which allows us to make contact with people we have not contacted before.
- ✓ In long distances, we may be exposed to surfaces contaminated with the corona virus.
- ✓ In case of going to the park and distant green spaces, use a personal vehicle as much as possible.
- ✓ Maintain social distance with others.
- ✓ When we go outside for physical activity, we should protect ourselves and others from contracting Covid-19 by social distancing, hand washing or disinfection, and cough and sneeze considerations [43].
- ✓ Avoid attending gatherings and if forced to attend, observe social distancing.

- ✓ Use a mask to be outside the house [44].
- ✓ Masks should not be used for children under two years of age, people with breathing problems, people who cannot move, and people who are unable to move the mask without the help of others. Therefore, it is better not to take these people to crowded areas.

Compliance with health tips when using the pool

- ✓ In the environment outside the pool water (shower, change of clothes, delivery of items, toilets, etc.), the possibility of the spread of covid disease is high.
- ✓ We must be very careful when using swimming pools, especially in high-risk cities in terms of the spread of Corona [45].
- ✓ If you feel sick or have recently been exposed to Covid-19, do not go to the pool under any circumstances.
- ✓ Observe social distancing by keeping a distance of 1.5 to 2 meters from people with whom we do not live.
- ✓ As much as possible, do not eat food in the pool environment [46].

Health messages about using a mask while doing physical activity in Corona conditions

- ✓ Avoid doing any moderate to intense physical activity in crowded centers.
- ✓ If you have underlying problems such as diabetes, it is better to exercise at home, and if you exercise outside, you must wear a mask.
- ✓ Using a mask during moderate to intense physical activity, especially intense sports activities, can cause breathing problems during the activity.

Health messages about physical activity in patients or those who have recovered from Covid

If we feel sick or our corona test is positive, we should not engage in any physical activity at home or outside the home and should rest completely [47-49]. During the time of covid, doing physical activity causes the disease to progress more and more. After the end of the covid disease, we should not do moderate to intense physical activity for 2 to 4 weeks, and then we can do light physical activity such as walking and soft cycling and gradually increase the intensity of our physical activity [50].

If we intend to do physical activity outside the house, we must follow all the points regarding social distancing (at least 1.5 meters away from others) and wearing a mask. If we have experienced unusual weight loss due to covid, we must take steps to compensate for this weight loss during the postpartum period. Because usually in this weight loss body tissues, including muscles, atrophy. Therefore, you should pay attention to both the type of nutrition and the type of physical activity. Of course, the recommended type of physical activity is light resistance such as weight bearing exercises, which can gradually increase the intensity of these exercises [51-53]. Before performing physical activity, warm up your body for 5 minutes so that the heart, lungs, and muscles gradually get the necessary coordination to consume energy and oxygen. Reduce the intensity and speed of exercise 5 to 10 minutes before the end of the exercise so that the body's devices have enough time to dispose of the waste materials produced in the muscles [54]. Warming up and cooling the body before and after physical activity makes you feel refreshed and prevents muscle pain afterwards.

Physical activity in corona conditions

In the preliminary epidemiological investigations, it was found that the spread of this virus in the Chinese city of Wuhan was through seafood, and there was a close relationship between the infected and people who worked in seafood markets or visited these places. In subsequent studies, it was found that one of the most important ways of transmitting this virus is human-to-human transmission through infected respiratory droplets or direct contact with objects such as toys in children. In addition, in 41% of cases, intra-hospital transmission has been reported [55-57]. Also, the Covid-19 virus can spread among humans through contact with asymptomatic carriers, and this causes a high potential for this pandemic in human societies.

Children and adults with cancer, due to the need for long periods of hospitalization as well as underlying immune system deficiency due to chemotherapy and radiation therapy, are at a greater risk of hospitalization compared to normal people [58].

Clinical signs

The incubation period of this virus is between one and fourteen days and is five days on average. Usually, common clinical symptoms during infection with covid-19 include fever, cough, sore throat, fatigue, muscle pain, and shortness of breath. Conjunctivitis is reported in some patients. Usually, these clinical symptoms are indistinguishable from other respiratory infections [59-61]. In some patients, at the end of the first week, the disease progresses to pneumonia, respiratory failure and death.

At the same time as clinical manifestations progress, there is often a significant increase in inflammatory cytokines such as interleukin 2, 7, 10, as well as granulocyte colony growth factor, tumor necrosis factor alpha, and macrophage inflammatory protein. In infants and children, clinical symptoms are much milder compared to adults. Also, younger infants are more susceptible to infection caused by Covid-19. Among the children in whom the virological evidence of the disease has been proven, 13% have no clinical symptoms.

Among symptomatic children, 5% of them experience shortness of breath or a drop in arterial blood oxygen saturation, which is much lower than that of adults [62-64]. Also, in a small percentage of cases, the disease progresses to acute respiratory distress syndrome or organ dysfunction. In infants and children in preschool age, the clinical manifestations of the disease are much more severe than in older children. In addition, underlying lung diseases and immune system defects cause more severe clinical symptoms in children. On the other hand, in 2.3% of children whose respiratory system the corona virus is found, there is a simultaneous infection with other viruses [61].

It is important to mention that children can play an important role in the transmission of this virus in society. Also, in some cases, the spread of this virus through feces continues for several weeks after diagnosis in children. Other clinical manifestations in children include gastrointestinal symptoms such as abdominal pain, nausea, diarrhea and vomiting, which are more common compared to adults. Some children may have wheezing or runny nose. Usually, in children, the clinical course is milder than in adults, and the most important reasons are:

- ❖ Children are usually well cared for at home and as a result are less exposed to pathogens or contact with sick people.

- ❖ It has been found that angiotensin II converting enzyme acts as a special receptor for the covid 19 virus. In normal human lung, ACE-2 is expressed in type 1 and 2 alveolar epithelial cells, and 83% of type 2 alveolar cells express ACE-2. Usually, in males, alveolar cells have a higher level of ACE-2 than in females. Also, Asians have a higher level of ACE-2 expression in their alveolar cells than the white population as well as African American communities. The binding of novel coronavirus 2019 on ACE-2 increases the expression of ACE-2, which can lead to the damage of alveolar cells and eventually a series of systemic reactions and even death. Recent evidence shows that due to the decrease in performance and the level of ACE-2 development in children, this age group shows less sensitivity to the Covid-19 virus.

- ❖ Children usually experience several respiratory infections such as respiratory syncytial virus (RSV) in the cold seasons of the year, and as a result, they have higher levels of antibodies than adults.
- ❖ Cellular and humoral immunity in children is not fully developed yet. Therefore, this can be one of the important reasons for the absence of a widespread and strong immune response of the body in dealing with viral infection.
- ❖ Many infectious diseases in children are milder than in adults. In adolescents and adults, rubella disease can present itself as a symptomatic disease with systemic manifestations, while in children, the manifestations of the disease are milder.
- ❖ In children, the respiratory system is usually healthier. Because this age group is less exposed to pollutant inhalation and smoking.
- ❖ In children, the probability of underlying diseases is much lower.
- ❖ In general, based on all these findings, it can be concluded that children are much less susceptible to the new corona virus 2019 than adults [4].

Examining the severity of the disease

Based on the largest study conducted on 2143 children, it was found that more than 90% of patients with confirmed Covid-19 had asymptomatic, mild or moderate form of the disease. Also, 5% of children had a severe form and less than 1% had a critical form of the disease. Based on the classification presented to determine the severity of the disease in Chinese studies, severe disease is defined when there is shortness of breath, central cyanosis, or arterial oxygen saturation below 92%. According to the definition, the critical form refers to cases where there is respiratory failure, acute respiratory distress, shock, and symptoms of multiple organ failure such as encephalopathy, heart failure, coagulation disorders, or acute kidney failure.

Also, in this study, it was found that half of the critical cases of Covid-19 occurred in infants under one year old. In another study conducted by Yang et al. on 171 children in Wuhan, China, it was found that only three children required special care, and all three had underlying diseases. The first child had hydronephrosis, the second child was undergoing chemotherapy, and the third child had intestinal torsion.

Warning signs

The warning signs of Covid-19 in children are

- One of the most important signs of danger in children is the presence of tachypnea. According to the definition of tachypnea, the number of breaths is more than 60 under two months, more than 50 between two and twelve months, more than 40 between one and four years of age, and more than 30 for children over five years of age [6].
- Respiratory distress including pulling in the chest, cyanosis, whining, blowing the nose and tachypnea.
- Cyanosis of lips and tongue.
- Inability to drink or swallow.
- Inability to communicate during the child's waking phase or extreme restlessness.
- Excessive dryness of the oral mucosa.
- Reduction of urine volume and shock.
- Fever more than 40 degrees Celsius or continuous high fever for more than three to five days.
- Return of symptoms after partial recovery [7].

Severe pneumonia refers to the following

- ❖ Temperature more than 38.3 degrees Celsius.
- ❖ Moderate to severe respiratory distress.
- ❖ Arterial blood oxygen percentage below 93% when the patient is receiving oxygen or below 90% in room air.
- ❖ Respiratory fatigue that can be with or without increased carbon dioxide concentration.
- ❖ Unexplained metabolic acidosis.

Discuss

The laboratory symptoms caused by the Covid-19 virus are similar to other human coronaviruses. Usually, in children, the number of white blood cells is normal or decreased. In some cases, there may be a decrease in peripheral blood neutrophils (neutropenia) or a decrease in lymphocytes (lymphopenia). The definition of lymphopenia varies by age group. Lymphopenia is considered to be less than 3,000 lymphocytes per microliter between the ages of one month and twelve months, less than 2,000 per microliter in one- to five-year-old children, and less than 1,100 per microliter in children over five years old. Occasionally, there is mild thrombocytopenia. The presence of thrombocytopenia can indicate a dire prognosis. In most cases, plasma reactive protein (CRP) and procalcitonin are normal. In severe cases of the disease, an increase in liver enzymes, serum lactate dehydrogenase, disturbance in coagulation parameters or an increase in D-dimer is observed. According to the study conducted by Liu et al., the laboratory findings in the course of Covid-19 are similar to those of influenza type A or B viruses, and these two infections cannot be distinguished from each other based solely on the above findings [8].

Radiological signs: In the early stages of the disease, no abnormal findings are seen in simple chest X-rays in children with Covid-19. Therefore, simple radiography is not recommended in the early stages of the disease in people without symptoms or without risk factors. Chest CT scan should be done quickly for suspected patients [7]. The most important finding in the early stages is one or more limited ground-glass opacities, mainly under the pleura or near the bronchial blood vessels, especially in the lower lungs. In severe forms of the disease, diffuse one- or two-sided lung density is usually seen with a frosted glass appearance. Also, compared to adults, densities surrounded by halo sign are more common in children and it has been proposed as a typical and common sign in children. Usually, the resolution of the radiological lesions in the CT scan is after a time interval after the resolution of the patient's symptoms, as well as the nucleic acid test. Sometimes, even after two consecutive nucleic acid tests are negative, lesions can still be seen in the CT scan of the lung. It is important to mention that the findings of Covid-19 in patients' CT scans should be differentiated from other viral infections such as influenza, parainfluenza, adenovirus and respiratory syncytial virus (RSV). Usually, during adenovirus-induced pneumonias, the lesions have a higher density, are denser, and the subpleural lesions are more prominent. In the case of respiratory infections caused by respiratory syncytial virus (RSV) or parainfluenza, the distribution of lesions is more around the bronchi and an increase in the thickness of the bronchial wall is seen. In the case of influenza virus, grid-like images are seen (Figure 4 & 5).

Figure 4. Forest plot showed Nursing Services for Children



Figure 5. Forest plot showed Children with Covid-19 and Hospitalization in Special Wards and Psychological Consequences in Them



Definitive diagnosis: In children strongly suspected of having Covid-19, sampling should be done from the upper respiratory tract using a nasopharyngeal or oropharyngeal swab. All the samples taken should be assumed to be infectious and the people who take these samples should comply with the necessary standards both at the time of obtaining the samples and at the time of transferring the samples to the laboratory. These people should use personal protective equipment such as glasses, masks, gloves and gloves.

Transmitted samples must be transported inside a three-layer container, and in the laboratory, samples suspected of having Covid-19 must be kept completely separate from other samples. Cotton swabs should not be used for sampling, and sterile swabs should be Dacron or rayon. Samples taken from the tonsils or small tongue are worthless.

In a child who is strongly suspected of having Covid-19, the disease cannot be ruled out with only a negative test, and it is necessary to take a second sample from the upper respiratory tract or a sample from the lower respiratory tract and send it. Sputum induction for sample collection is not recommended.

Also, in bronchoscopy as a sample collection method, there is a possibility of transmitting the infection to others. Therefore, it should be avoided and preferably limited to cleaning the airways of intubated patients from mucous plaques. The RNA of this virus is detected by polymerase chain reaction RT-PCR8. Results are generally available within a few hours to two days. A positive test result should be confirmed by a second RT-PCR test targeting a

different SARS-CoV-2 gene. Another test used for diagnosis measures the IgG and IgM antibodies produced to fight this virus in blood, serum and plasma samples [3].

In this test, a type of immunochromatography method is used. The combined measurement of IgG and IgM antibodies has higher sensitivity and specificity than testing each of these two antibodies alone. This method can be used for rapid screening of carriers, symptomatic or asymptomatic people in hospitals and clinics [4].

Therapeutic management of covid 19 in children

Supportive treatments: To date, no specific treatment has been developed for this virus, and there is no vaccine against this virus. Therefore, prevention is the best solution. Considering the specific characteristics of this virus, including non-specific symptoms, transmission of the virus during the latent period, the preference of this virus for mucous membranes such as the conjunctiva, the long duration of this disease, and the possibility of transmission even after recovery, it is very difficult to prevent this virus. Until today, the created vaccines are in the experimental stage and a definitive vaccine has not yet been invented. The treatment against this virus consists of two parts. Supportive treatments include water and electrolyte adjustment, fluid administration, proper oxygenation and respiratory support, antipyretics, and painkillers. Specific treatments include the administration of antiviral drugs, although there is currently no strong evidence in favor of a specific drug in children.

Specific treatments: Specific treatments in patients admitted to the intensive care unit include simultaneous administration of antiviral drugs and immunomodulators. Such as oseltamivir along with hydroxychloroquine and coltra drug, in addition to these three drugs, ribavirin or even antibiotics can also be used based on the patient's condition.

In patients with mild pneumonia, only the administration of oseltamivir and hydroxychloroquine is indicated. Of course, treatment protocols may change over time or as more experience is gained from treating children with Covid-19 [7].

1- Chloroquine and hydroxychloroquine: These two drugs are among antimalarial drugs that are indicated in the treatment of autoimmune diseases such as lupus and rheumatoid arthritis due to their effects on modulating the immune system. These drugs also have antiviral effects. Side effects of hydroxychloroquine are usually mild and include confusion, dizziness, headache, and anorexia, but the main side effects of this drug include eye and cardiac toxicity. If eye disorders occur while taking this medicine, the administration of this medicine should be stopped as soon as possible. Chloroquine and hydroxychloroquine can lead to prolongation of QT interval as well as ventricular arrhythmia, especially in conditions of simultaneous administration with Coltra. For this reason, it is recommended that an ECG be taken before starting this medicine, and cardiac monitoring be performed during the treatment. Rarely, these drugs can cause psychosis and leukopenia. In patients suffering from low potassium level (hypokalemia), low blood magnesium (hypomagnesemia) or bradycardia, this drug should be used with great caution [8].

2- Seltamivir: This drug belongs to the family of neuraminidase inhibitors, which inhibits the release of the virus from cells and prevents the virus from passing through the mucous surfaces of the respiratory system. This drug is routinely used to treat influenza virus. Recently, it has been shown that despite the beneficial effects of this drug in the course of MERS-CoV infections, this drug is not effective in the treatment of the new corona virus.

3- Coltra: This drug is a combination of two drugs, lopinavir and ritonavir, which was used for the first time in the treatment of children with AIDS. The positive therapeutic effects of this drug in SARS and MERS infections have been proven in clinical trials. This drug is available in both tablet and oral solution form. The oral solution form of this drug is indicated for children whose body surface is less than 0.6 square meters. This drug is metabolized through the liver. Therefore, it is contraindicated in patients with liver failure. Also, taking this medicine can cause first, second- or third-degree heart block. Side effects such as diarrhea, vomiting and skin rashes can be seen in some children using this medicine.

4- Ribavirin: This drug is usually used together with interferon to treat RNA viruses in clinical trials. This drug inhibits polymerase activity and as a result the synthesis of viral proteins. An important side effect of this drug is hemolytic anemia, especially in high doses. Today, there is no strong evidence in favor of using this drug in Covid-19.

5- Interferon: This drug is a broad-spectrum antiviral that inhibits the proliferation and spread of the virus. The beneficial effects of taking this drug in children have been proven in the experiences of Chinese scientists. The side effects of this drug include mild fever and flu-like symptoms, and the use of this drug is prohibited in children with impaired liver tests and creatinine clearance less than 50 ml/min. Also, the use of this medicine is contraindicated in children who have mental disorders, aplastic anemia or severe heart diseases.

6- Remdesivir: This drug is a nucleotide analogue whose main mechanism is to inhibit the polymerase of RNA viruses. This drug has broad-spectrum antiviral activity and is effective against various viruses such as Ebola virus, coronavirus, Sars and MERS. This drug is used for patients who have severe symptoms such as acute respiratory distress syndrome and need mechanical ventilation. Clinical trials regarding this drug have not yet been completed and it has not yet been approved by the Food and Drug Administration.

7- Favipiravir: This drug is a nucleoside procurator that was first used to treat pandemic influenza and then used to treat some other viruses. Confirming the antiviral effects of this drug requires many additional studies. Currently, many clinical trials are underway to investigate the effect of this drug on the Covid-19 virus.

8- Actmera: This drug, whose other name is Tocilizumab, is effective in cases of Covid-19 that are accompanied by cytokine storm. During the infection with this virus, the plasma levels of cytokines in the serum such as interleukin 2, 6, 7, 10, granulocyte growth stimulating factor, macrophage inflammatory protein one alpha and tumor necrosis factor alpha increase. This phenomenon, which is known as cytokine storm, is closely related to the severity and severity of the disease, as well as the prognosis of the disease. Among these cytokines, interleukin 6 is more important. Octmera drug is a monoclonal antibody against interleukin 6, which is commonly used in the treatment of rheumatoid arthritis. Clinical trials have not yet been conducted regarding the use of Favipiravir, Remdesivir and Actmera in children.

Plasma of recovered people

In the body of people who have recently recovered from the new coronavirus, there are antibodies circulating in their blood stream. The injection of these antibodies into the body of patients suffering from Covid-19 helps the body of these people to fight the infection better. Although clinical trials are still ongoing, the initial results of plasma therapy for patients in the early stages of corona virus infection in different countries have been successful.

Prevention

Those infected with the new virus, Covid-19, are considered the main source of spreading the infection in the society. Considering their general condition, infected children should be isolated at home in a closed room with a separate toilet and bathroom, or hospitalized in special departments under the supervision of medical staff in an isolated room. In order to prevent the transmission of the virus through respiratory droplets, children should be taught to cover their mouths and noses with tissues when sneezing and coughing. Frequent hand washing should be taught to children. To disinfect children's toys, you can use a temperature of 56 degrees Celsius for 30 minutes, 75 degrees alcohol, disinfectant solutions containing chlorine and ultraviolet rays, and when the child enters crowded spaces or improper ventilation, be sure to use a mask. Children who have a history of contact with a person infected with or suspected of having Covid-19 should be monitored and their body temperature should be checked regularly and should go to the hospital in case of possible symptoms.

If the child needs respiratory support during hospitalization, he should be immediately transferred to isolation rooms with negative pressure. Other members of the family of a child who is suspected of having Covid-19 must strictly observe health issues and stay at least one meter away from the child. Also, the surface of the toilet,

bathroom, table, bed and all the surfaces that the child frequently comes in contact with should be washed first with soap and water and then with a bleaching solution of 0.5% sodium hypochlorite. The nurse who takes care of the child must use a surgical mask and avoid direct contact with respiratory or oral secretions or the child's feces. In addition to frequent hand washing with soap, it is recommended to use disposable plastic or latex gloves if possible. The affected child's clothes, towels and sheets should be kept in a separate nylon bag and then washed with hot water. It is absolutely necessary to wear gloves when handling this garment.

Conclusion

Most of the cases of corona infection are mild, but being mild does not mean that the symptoms of the corona virus do not appear at all. Most people with covid-19 have fever and cough, but other corona symptoms vary according to the severity of the disease. According to preliminary research, more than 80% of people 20 or under 20 years old do not show any symptoms after being exposed to the corona virus. Therefore, research shows that only 35.4% of people over 80 years old have no symptoms after contracting the new corona virus. Meanwhile, 73.9% of people under the age of 60 who were confirmed to be infected with Covid-19 did not have fever or respiratory symptoms. This case is important in the context of the spread and transmission of the virus, because it shows that 8 out of 10 people carrying the corona virus do not show any symptoms. If you have encountered the symptoms of corona, you can use the smart corona test of the hospital to estimate the infection. Recent research in Wuhan, China shows that most people show symptoms of corona within 4 days after being infected, but the covid-19 virus may remain dormant for up to 2 weeks. More recent research has confirmed that the average incubation period of the virus is approximately 5 days. Some people with covid-19 are asymptomatic.

That is, they do not show any obvious symptoms of corona or related symptoms such as cough. An asymptomatic person may transmit the virus to others without knowing it. Any person who has tested positive, but has no symptoms, must follow health protocols such as wearing a mask and social distancing. The covid-19 virus is primarily transmitted through droplets of saliva or nasal secretions of a sick person when sneezing and coughing. Therefore, practicing breathing etiquette is very important. On average, those who develop severe symptoms such as shortness of breath will develop this condition within 8 days after the appearance of other symptoms. There is currently no vaccine or specific treatment for Covid-19, but clinical trials are ongoing to find a possible treatment. Despite the numerous articles that exist in the field of infection with Covid-19 in adults, less studies have been done on children. The prevalence of the disease as well as the severity of clinical symptoms in children is far less compared to adults and the disease usually has a better prognosis. In infants under one year, the severity of clinical symptoms is higher than in older children. In children with humoral and cellular immune system defects, as well as children with cancer, due to the need for long periods of hospitalization, the risk of contracting Covid-19 increases compared to normal children in the community. Along with the increase in the prevalence of the disease in adults, it is expected that more children will be infected with this virus. Also, children are more likely to have other respiratory viruses at the same time as the covid-19 virus. Due to the lack of a specific anti-viral drug and also a vaccine against this virus, the best way is to comply with strict health standards.

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