

CONTINUITY OF ANTICOAGULANT TREATMENT IN PATIENTS WITH COVID-19***Suramisova Aygul Tursinbekovna***

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Annotatsiya: COVID-19 pandemiyasi davomida bemorlarning qon ivish tizimidagi o'zgarishlar, tromboz va emboliya xavfini oshirishi sababli antikoagulyantlar bilan davolash muhim ahamiyat kasb etdi. Ushbu annotatsiya COVID-19 bilan kasallangan bemorlarni antikoagulyantlar bilan davolashning davomiyligi, ko'rsatmalari, xavflari va monitoringi haqida qisqacha ma'lumot beradi. COVID-19 kasalligi ko'plab bemorlarda qon ivishining o'zgarishlariga olib keladi, bu esa trombotik hodisalar xavfini oshiradi. Antikoagulyantlar, masalan, past molekulyar og'irlikdagi heparinlar, trombozning oldini olish va davolashda muhim rol o'ynaydi.

Kalit so'zlar: COVID-19, tromboz, emboliya, qon ivish tizimi, profilaktika davolash, dori dozalari, qon ketish xavfi, tibbiy mutaxassislar, davolash davomiyligi, bemor, profilaktika.

Резюме: антикоагулянтная терапия приобрела актуальность в период пандемии COVID-19 в связи с изменениями в свертывающей системе крови пациентов, повышающими риск тромбозов и эмболий. В этом реферате представлена краткая информация о продолжительности, показаниях, рисках и мониторинге антикоагулянтной терапии у пациентов с COVID-19. Заболевание COVID-19 вызывает у многих пациентов изменения свертываемости крови, что увеличивает риск тромботических событий. Антикоагулянты, такие как низкомолекулярные гепарины, играют важную роль в профилактике и лечении тромбозов.

Ключевые слова: COVID-19, тромбоз, эмболия, свертывающая система крови, профилактическое лечение, дозы препаратов, риск кровотечения, медицинские работники, продолжительность лечения, пациент, профилактика.

Abstract: anticoagulant therapy has gained importance during the COVID-19 pandemic due to changes in the blood coagulation system of patients, increasing the risk of thrombosis and embolism. This abstract provides a summary of the duration, indications, risks, and monitoring of anticoagulant therapy in patients with COVID-19. The disease COVID-19 causes changes in blood coagulation in many patients, which increases the risk of thrombotic events. Anticoagulants, such as low molecular weight heparins, play an important role in the prevention and treatment of thrombosis.

Key words: COVID-19, thrombosis, embolism, blood coagulation system, preventive treatment, drug doses, risk of bleeding, medical professionals, duration of treatment, patient, prevention.

Today, it has become known to everyone that the coagulation system of the blood of patients infected with COVID-19 is one of the organs that suffer a lot of damage. This indicates that it is the main factor in the course of the disease and one of the important factors in the

exacerbation of the disease. As a result of damage to the blood coagulation system of almost all patients, in addition to the development of many secondary diseases, many complications arise after these diseases, and this condition decreases the quality of life of patients, develops disability and reduces the ability to work or is completely incapacitated. cause. In a word, it is not wrong to say that managing the coagulation system in sick patients is disease management. [Accepted by the Ministry of Justice of the Republic of Uzbekistan on March 30, 2021, account number 8] These sanitary rules, norms and hygiene regulations (hereinafter - sanitary rules) medical organizations adapted to the treatment of COVID-19 infection and classification determines sanitary-hygiene and anti-epidemic measures to prevent infections.

2019 coronavirus infection (COVID-19) is an infectious disease caused by SARS-CoV-2, the severe acute respiratory syndrome coronavirus 2. The disease was first identified in Wuhan, China in 2019 and spread globally, causing the 2019-2020 coronavirus pandemic. The disease causes symptoms such as high fever, cough, and difficulty breathing. In some cases, muscle pain, phlegm, and sore throat are observed. Although most people infected with the virus develop mild symptoms, in some patients the disease can lead to severe pneumonia and multiple organ failure. Among diagnosed cases, the mortality rate is on average 3.4 percent. Among people under 20 years old, this indicator is 0.2 percent, among people over 80 years old it is 15 percent. The virus is a type of disease that spreads from person to person through droplets produced when coughing and sneezing, similar to the flu. Although the virus is most contagious when a patient develops symptoms, it can be transmitted to others before symptoms appear. Symptoms usually appear within five days, but this period can last from 2 to 14 days. The main symptoms of the disease are fever, cough and shortness of breath. The disease can cause pneumonia and acute respiratory distress syndrome in the patient. There is currently no vaccine or medication for COVID-19. Disease management consists of symptomatic treatment and supportive therapy. To prevent the spread of the disease, it is recommended to wash hands, cover your mouth when you cough, and keep a distance from others (especially those who are not feeling well). Individuals suspected of having the virus are advised to self-isolate for 14 days. The pandemic has caused a number of socio-economic challenges globally, leading to the postponement or cancellation of sports and cultural events, and concerns about shortages of medicine, electronics, and food. information and conspiracy theories were published, cases of xenophobia and racism were observed in various countries, and panicked consumers were observed to buy goods such as toilet paper in large quantities. In July 2021, WHO Chairman Tedros Adhanom Ghebreyesus said that a vaccine-resistant strain of the coronavirus may appear as a result of vaccinations. In the treatment of patients suffering from corona virus disease, the use of anticoagulants is the main part of the standard of treatment. Patients suffering from coronavirus disease are treated in our center. In addition to the treatment of these patients, the effectiveness of the treatment is also checked and conclusions are drawn accordingly. During the treatment and observation, we witnessed that their coagulation system is damaged despite the use of a number of anticoagulants. That is, it was felt that anticoagulants did not work after 7-8 days or their effect was insufficient, and this situation is reflected in the analyses. After conducting observations in several patients, we worked on how to use anticoagulant therapy more effectively and determined the optimal methods of using anticoagulants. we tried Despite the fact that some patients received low-molecular-weight heparin, some high-molecular-weight heparin, and some revoroxaban (or Xarelta) during the treatment, the results of the analysis showed that after a few days (on average, 7 days in patients taking these drugs) it was noticed that the coagulation system indicators were changing towards coagulation instead of changing according to blood thinning. In the words of

doctors, the analysis showed that the drugs were not working. This made me think about how to influence the anticoagulant system in the treatment of patients. We obtained the following results for a total of 120 patients in 10 to 12 groups, using 3 groups of drugs. We conditionally divided the patients into 4 groups according to which group of drugs we use.

- o group receiving low molecular weight heparin

- o Revoroxaban group

3 groups of drugs were administered to the group with periodic replacement (anticoagulants of the 1st group on 6-7 days, and anticoagulants of the 3rd group from the 7-8th day).

The disease COVID-19 causes changes in blood coagulation in many patients, which increases the risk of thrombotic events. Anticoagulants, such as low molecular weight heparins, play an important role in the prevention and treatment of thrombosis.

Duration of treatment with anticoagulants

1. Prophylactic treatment: In severe forms of COVID-19, anticoagulants are usually started in the early stages of the disease and continued until the patient's condition improves.
2. Therapeutic treatment: anticoagulants are used in a therapeutic dose in patients with signs of thrombosis. Duration of treatment is determined depending on the clinical condition of the patient.
3. Monitoring and evaluation: Coagulation parameters (eg, PT, APTT) should be monitored regularly during anticoagulant therapy. This helps to determine the correct dosage of the drug and prevent side effects.

Risks and Precautions:

the risk of bleeding may increase during treatment with anticoagulants. Therefore, it is necessary to carefully monitor patients and determine the dose of the drug individually.

Anticoagulant treatment of patients with COVID-19 is an effective method for prevention and treatment of thrombosis, the duration of which is determined by the clinical condition of the patient. Regular monitoring and individual approach by medical professionals is necessary. Future studies are expected to provide additional information in this area.

COVID-19, thrombosis and anticoagulants. The SARS-CoV-2 virus enters the lungs and attaches to the ACE receptor in the alveoli of pneumocyte cells, triggering immune cells from the arteries and producing cytokines and chemokines. As a result, immune cells enter the alveoli from the blood and activate macrophages and neutrophils in the alveolar space. UFH, with anti-inflammatory properties, can inhibit cytokines and chemokines. As a result, immune cells are prevented from entering the alveoli. Aspirin can also prevent the aggregation of platelets and neutrophils by inhibiting IL-6. FXa converts prothrombin to thrombin, and AT can block this path. Thrombin can also convert fibrinogen to fibrin. Accumulation of fibrins and blood cells cause thrombosis ATIII can inhibit the thrombosis process. Finally, thrombosis causes MOF. Thrombotic heart damage includes DIC, MI, and VTE. The lungs can develop ARDS, ALI, PE, and PTE. Kidney damage includes AKI and ESRD. Stroke is a complication of thrombosis in the brain. ACE, angiotensin-converting enzyme; AKI, acute kidney injury; ALI, acute lung injury; ARDS, acute respiratory distress syndrome; AT, antithrombin; COVID-19, coronavirus disease 2019; DIC, disseminated intravascular coagulation; ESRD, end-stage renal disease; FXa, Factor

Xa; MI, myocardial infarction; MOF, multiple organ failure; PE, pulmonary embolism; PTE, pulmonary thromboendarterectomy; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; UFH, unfractionated heparin; VTE, venous thromboembolism. In patients with COVID-19, the increasing levels of D-dimer, a soluble fibrin breakdown product produced when the fibrinolytic system breaks down thrombi in an organized manner, can be related to several factors, such as the life cycle of the virus. Another hypothesis in these patients with COVID-19 is the inflammatory responses to viral infection and the dysfunction of endothelial cells with thromboembolic complications. We should also consider that a direct consequence of acute lung injury as seen in COVID-19 infection. As far as we know, until now, there are no completed randomized clinical trials (RCTs) investigating the best anticoagulant choice and treatment timing, duration, and dosage in patients with COVID-19. They are all in progress. Plus, various guidelines regarding the management of patients with COVID-19 have been proposed by various international organizations, yet most of them do not comment on anticoagulation strategies. These guidelines are based merely on consensus statements and expert views. They also have some limitations. For instance, they recognize SARs-COV2 as a cause of microthrombi, which worsens the prognosis of patients; however, they cannot propose appropriate guidelines or consensus statements to address this issue. Moreover, they suggest therapeutic doses of heparin for diagnosed or highly suspected macro-thrombotic events, like PE and deep vein thrombosis (DVT), although they miss the subject of undiagnosable micro-thrombotic events. Finally, no distinct scoring system for measuring VTE risk on admission is specific to SARs-CoV-2. For hospitalized patients with COVID-19 with a more than normal upper limit D-dimer level, in need of low-flow oxygen, and with no elevated bleeding risk, heparin (in therapeutic doses), especially low-molecular-weight heparin (LMWH), has been recommended by the US National Institutes of Health (NIH) and many other trials. The ideal thromboprophylactic regimen in patients with COVID-19 is not yet understood. During the SARS-CoV-2 infection, anticoagulation can be attained by intravenous (i.v.) or oral anticoagulants. Although some antiviral agents used to treat SARS-CoV-2 infections interact with oral anticoagulants, such as anti-factor Xa (e.g., rivaroxaban and apixaban), heparin rarely demonstrates such interactions. Moreover, these oral agents are highly susceptible to metabolic changes in the body during critical or acute phases of the disease because their metabolism and serum levels are affected, leading to uncontrolled bleeding or thrombosis. Among the different types of I.V. anticoagulants, UFH is the only agent requiring frequent laboratory monitoring. However, UFH is more affordable, has a shorter half-life, and can be easily excreted from the body, even in those with renal dysfunction, obesity, and other critical conditions. In addition, the anti-inflammatory effects of UFH can be beneficial in alleviating the inflammatory processes of COVID-19, such as the associated COVID-19 CSS. Interestingly, LMWH has less direct antiviral activity due to the shorter duration of competitive spike protein binding than UFH. Nevertheless, LMWH might be preferred to UFH due to several reports of heparin resistance in patients with COVID-19, the lower risk of bleeding and dose-dependent plasma levels, and a longer half-life. In patients with COVID-19 with a history of heparin-induced thrombocytopenia (HIT), activated factor X (Xa) inhibitors, like fondaparinux, could be administered as an alternative. Due to the occurrence of coagulopathy in ARDS, which might be limited to the lungs, it has been hypothesized that nebulized anticoagulation might be the best approach. However, previous reports have not shown the clinical benefit of this route of administration, but there is a need for further studies. Furthermore, although UFH is the drug of choice in any trimester of pregnancy, LMWH is the best option for postpartum patients. In conditions where anticoagulants are contraindicated

or unavailable, mechanical thromboprophylaxis, such as pneumatic compression devices, should be considered. However, applying mechanical and pharmacological thromboprophylaxis for critically ill patients with COVID-19 might lead to better outcomes if not contraindicated. Conversely, anticoagulation therapy is not beneficial in outpatient settings, as it has not been associated with an improved prognosis. Nonetheless, there are conditions where anticoagulation therapy would appear necessary, such as immediately following discharge from the hospital. In the form of symptoms of the disease, in most cases the following are observed:

increase in body temperature (83-99%),
cough (59–82%),
general weakness (44–70%),
loss of appetite (40-84%),
shortness of breath, lack of breath (31–40%),
muscle pain (11-35%).

Other symptoms include sore throat, runny nose, headache, diarrhea, nausea, and vomiting, as well as loss of smell and taste.

In elderly people and immunocompromised people, the following can be observed: an atypical process without fever, general weakness, decreased concentration and physical activity, diarrhea, loss of appetite, and the development of delirium (loss of mental clarity).

According to the document, fever and cough are less common in children than in adults.

In general, the guide mentions the following mild symptoms of the disease:

an increase in body temperature to 38 degrees (or the disease passes without an increase in temperature),
increased sweating,
general weakness,
cough
anxiety,
sore throat,
dry throat, nausea,
vomiting or diarrhea
myalgia and body aches,
headache,
loss of sense of taste and smell.

In the document, doctors recommended symptomatic treatment at home for patients with mild COVID-19:

antipyretic and painkillers (for example, paracetamol, ibuprofen);
complex therapy for the treatment of rhinitis and nasopharyngitis (moisturizers, nasal drops);
complex treatment of bronchitis (antitussives, broncholytic agents and other drugs);
drinking hot liquids frequently to loosen phlegm, moisten mucous membranes, and maintain water balance. What should be done to prevent infection?

There are four precautions you and your family can take to prevent infection:

Washing hands frequently with alcohol-based hand sanitizers or soap.

When coughing or gagging, cover your mouth and nose with a bent elbow or a tissue, then dispose of the tissue in a closed trash can.

Avoid close contact with anyone who has symptoms of a cold or fever.

If you or your child has a fever, cough, or shortness of breath, seek medical attention as soon as possible. Given the unpredictable nature of the virus and the duration of its spread, UNICEF is



working with governments, the World Health Organization and other partners in emergency situations in regions, especially in countries with weak health systems and limited capacity to deal with the main outbreaks of the disease. is developing action plans.

On February 17, UNICEF appealed for \$42.3 million to support efforts to prevent the spread of the COVID-19 virus. The initial funding will be used to help children, pregnant women and their families know where to get help and prevent the spread of COVID-19, as well as efforts to prevent the spread of misinformation.

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