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Futile therapy in the conditions of the Covid-19 pandemic

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Abstract: Futile therapy is the prolonged maintenance of organ function. This process in this case does not bring therapeutic benefits, and its task is to maintain the failed organs. The article aims to present the differences between influenza and Covid-19 and to draw attention to the problem of the futility of therapy in the context of a pandemic.

Keywords: futile therapy, intensive therapy, COVID-19 pandemic, coronavirus, SARS-CoV-2

Introduction:

The topic of futile therapy has never been as prominent as during the Covid-19 pandemic. The approaching season of viral infections prompts deep thoughts on this topic. The COVID-19 pandemic has taken the whole world by surprise [1,2]. In the era of the COVID-19 pandemic, it has become important

to adequately secure and manage as many intensive care beds as possible [3]. Futile therapy consists in prolonged maintenance of organ function. This process in this case does not bring therapeutic benefits, and its task is to maintain inefficient organs [4,5].

COVID-19 is an acute infectious disease of the respiratory system that is caused by infection with the SARS-CoV-2 virus [6,7]. It was first recognized and described in November 2019, in central China, exactly in the city of Wuhan, Hubei province [8,9]. The SARS-CoV-2 coronavirus belongs to the coronaviridae family, which includes zoonotic viruses found in birds and mammals [10]. This virus is related to the SARS virus and was previously called "2019-nCoV". On February 11, 2020, the International Committee on Virus Taxonomy (ICTV) decided to call the virus coronavirus 2nd syndrome of severe acute respiratory failure (SARS-CoV-2). The WHO, on the other hand, finally decided to name the disease caused by this virus as COVID-19 [7,11–13].

Coronaviruses are divided into four types:

1. alphacoronaviruses,
2. betacoronaviruses,
3. gammacoronaviruses,
4. deltacoronaviruses [14].

The SARS-CoV-2 coronavirus belongs to the genus of betacoronaviruses [15]. It has a shape similar to spherical. The diameter of a single virus particle is between 60 and 140 nanometers [16].

Influenza virus and SARS virus:

The disease is transmitted by droplets - as with the spread of influenza and other respiratory pathogens. It spreads between people in close proximity. In addition, covid-19 infection is also possible by touching a given surface or object on which the virus was located, and then touching, for example, your own mouth, eyes or nose [17].

There have also been reports of the spread of COVID-19 by infected patients who showed no symptoms [18]. Asymptomatic patients pose a huge threat to the spread of the disease. Patients can remain infectious for up to two weeks after symptoms have subsided. Children become infected less often than adults [19,20].

All individuals can significantly reduce the risk for both themselves and others:

1. wearing a mask,
2. keeping a physical distance,
3. washing hands often,
4. taking other preventive measures [17].

The WHO's standard recommendations to the general public mainly cover hand and respiratory hygiene and safe and appropriate feeding practices.

COVID-19 is very often confused with influenza, which can sometimes be very dangerous consequences for the health and life of the patient. The table below shows the fundamental similarities and differences between COVID-19 and influenza [21].

Table 1. COVID-19 and influenza – similarities and differences.

	COVID-19	FLU
SIMILARITIES		
Symptoms	<ul style="list-style-type: none"> • Fever/subfebrile • Chills • Cough • Difficulty breathing • Tiredness • Sore throat • Qatar • Muscle/joint pain • Headache • In some, vomiting and diarrhea 	
Route of infection	<ul style="list-style-type: none"> • Droplet route 	
Complications	<ul style="list-style-type: none"> • Pneumonia • Lung failure • ARDS • Sepsis • Heart attack • Stroke • Multi-organ failure • Exacerbation of concomitant diseases • Secondary bacterial infections 	
Risk group for severe course	<ul style="list-style-type: none"> • Elderly • Immunocompromised people • People with certain comorbidities 	
DIFFERENCES		
Symptoms	<ul style="list-style-type: none"> • Taste and smell disorders 	-
Incubation period	<ul style="list-style-type: none"> • Longer – usually 5 days after infection, but symptoms may appear as early as 2 days or only 14 	<ul style="list-style-type: none"> • Shorter – symptoms usually appear within 1-4 days of infection
Infectivity	<ul style="list-style-type: none"> • Usually 1-2 days before the appearance of symptoms, but a longer period of infectivity 	<ul style="list-style-type: none"> • Usually 3-5 days before the onset of symptoms
Children	<ul style="list-style-type: none"> • They get sick much less often than adults 	<ul style="list-style-type: none"> • A large factor of illness
Complications	<ul style="list-style-type: none"> • Blood clots in the venous and arterial vessels of the lungs • In children: pediatric multisystem inflammatory syndrome associated with COVID-19 infection (PIMS-TS) 	<ul style="list-style-type: none"> • Most people recover within a few days to two weeks
Risk groups for severe course	<ul style="list-style-type: none"> • People with obesity • People with comorbidities 	<ul style="list-style-type: none"> • Children • Pregnant women • People with chronic diseases
Vaccine	<ul style="list-style-type: none"> • Available • no registered medicine 	<ul style="list-style-type: none"> • Available • Available

Medicines		
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Source: Own study based on: [22–24].

Knowing the differences in the physical examination as well as the history of influenza and Covid-19 infection allows for early detection of people who may need intensive medical care in the future.

Among adults, the risk of severe illness caused by COVID-19 increases with age. By far the most vulnerable are the elderly. Severe illness means that a person with COVID-19 may require hospitalization, intensive care, or connecting a patient to a ventilator. People who suffer from other diseases are also at risk of infection, which makes them less resistant [23,25,26].

Futile therapy consists in prolonged maintenance of organ function. This process in this case does not bring therapeutic benefits. Its task is to sustain inefficient organs. It does not give the opportunity to cure the patient. Futile therapy usually occurs within intensive care. The emergency criteria for admissions and discharges are flexible and can be adapted accordingly depending on locally available resources, the possibility of transferring patients to other centres, or the actual and expected number of patients requiring admission [27–29].

In the event of a strong pandemic, it may be necessary to set an age limit for patients admitted to the ICU. It is not a question of making decisions solely on the basis of an axiological criterion, but of securing resources that can be quickly depleted for patients with a higher probability of survival. The premise of such action is to obtain the greatest possible benefit for as many people as possible. If the ICU is fully completed, continuing to receive patients on a first-come, first-served basis would be equivalent to a decision not to treat any further patients without access to intensive care [29–31]. Improving early diagnosis of patients and perhaps creating a register of suspected infections will allow intensive care units to help more patients.

Summary:

The general condition of the patient and the occurrence of other diseases should also be assessed. It is very important to carefully analyze the declarations of will not made by the patient regarding taking therapeutic measures with him. In the event that the doctor/doctors consider that it would be inappropriate to conduct intensive care in a given patient, the decision to set the limits of therapy should be properly justified and documented, and then informed about it. In the use of futile therapy, possible decisions on the unreasonableness of intensive care are justified, resulting solely from the criteria of distributive justice [32–34].

Any effort to reduce the intensity of treatment should be undertaken jointly and with the approval of the entire treatment team and, if possible, in agreement with the patient and his relatives.

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