



RESOLUTION of Teleconference «IV Infusion Therapy School»

October 19, 2021
Kyiv, Ukraine

Almost 6 500 health care specialists have registered to participate in Online Teleconference «IV Infusion Therapy School».

The task of the School is to help general medicine physicians to improve their ability to administer infusion therapy in accordance with the latest trends and national and international recommendations.

Ten main reports were offered to the participants for review and discussion and they were dealing with management of patients with acute coronaviral infection, chronic cerebral ischemia and chronic kidney disease, and the workshop «Main aspects of dealing with e-sick leaves» took place.

The conference agenda consisted of 2 units:

- Pathogenetic treatment of COVID-19;
- Topical issues of infusion therapy;

The chat was operated during «IV Infusion Therapy School», so each participant had a chance to ask questions and to get answers from the speakers. And many participants left most heartfelt thanks to the speakers in the chat for their informative reports.

Conclusions and decisions based on discussion of reports:

1. Pandemic COVID-19 is one of the most massive pandemics of the 21 century. Only in Ukraine more than 2.6 million people were infected with COVID-19. It often provokes complications, including manifestation and decompensation of diabetes mellitus. As far as there is no causal treatment, the pathogenetic one – infusion therapy – holds a special place. The xylitol based balanced crystalloid solution slows down ketogenesis, reduces concentration of ketone bodies in blood and improves the overall health status of the patients.
2. During this wave of COVID-19 epidemic «Delta» strain dominates, on such background the number of cases of severe disease course increases and case mortality among young patients becomes higher. An important feature of this new strain is its ability to affect all age-group populations and children as well. The latency period is equal to 1-3 days. Higher viral load is observed. The risk of hospitalisation is 1.85 times higher in comparison to «Alpha» strain.
3. In 70% of cases when people died after COVID-19 a disseminated intravascular coagulation syndrome has developed on the fourth day of disease. SARS-CoV-2 through ACE-2 receptors causes general inflammation of endothelium, microcirculation disorders appear and focuses of piecemeal necrosis in internal organs may develop. The tasks of the infusion therapy are to restore nitrogen oxide synthesis, to prevent aggregation and adhesion of formed elements and to normalize blood capillary perfusion.

According to the protocol for management of patients with COVID-19 (Eastern Virginia, USA), it is recommended to hold up euvolemia. Fluid resuscitation with 500 ml of bolus of hyperosmolar balanced crystalloids is justified.

4. For efficient and convenient infusion therapy for the patients with COVID-19 it is recommended to use solutions having balanced electrolytic composition, buffer – alkalinity increaser (lactate, acetate) and polyatomic alcohols with different recovery ways, including insulin-independent ones, for example, hyperosmolar crystalloid solution, and balanced electrolytic solution based on xylitol. In the international research RheoSTAT Pneumonia a balanced hyperosmolar solution was studied and it was proved that it effectively relieves intoxication and has high safety profile (there were no cases of pulmonary edema when it was used). Administration of such solution during treatment of pneumonia is justified from the point of view of 1-B level evidence base and by high clinical efficiency.
5. COVID-19 is a system lesion of vessels that causes damaging of lungs, heart, kidneys, brain and gastro-intestinal tract. SARS-CoV-2 through interaction with ACE-2 receptors results in vessel constriction, oxidative stress, has a prothrombotic action, contributes to development of myocarditis, pulmonary edema, etc. Use of syndromic and pathogenic approach to treatment of COVID-19 with addition of edaravone, fixed combination of L-carnitine and L-arginine and hyperosmolar crystalloid solution in the research contributed to evidently faster regression of clinical symptoms, significant reduction of D-dimer level and more significant reduction of AST and ALT in the main group. Adding of Ethylmethylhydroxypyridine succinate contributes to decrease of anxiety level and improvement of cognitive functions.
6. Bacterial complications, including bacterial pneumonia, may develop on the background of coronaviral infection. It may be a result of decrease in immunity caused both by SARS-CoV-2 infection and by administration of glucocorticosteroids, monoclonal antibodies, broad-spectrum antibiotics, etc. It is recommended to use the 3rd generation cephalosporins (for example, cefoperazone + sulbactam) in combination with macrolide for initial treatment of bacterial complications. If they are not efficient enough the 4th generation fluoroquinolones are prescribed, for example, moxifloxacin as a concentrate. Administration of parenteral acetylcysteine contributes to damaging of bacteria biofilms and improves the efficiency of antibiotic treatment, and has pulmoprotective action.
7. The underlying pathogenesis of chronic ischemia of the brain is vascular dysfunction and damage to cerebral structures. Medical care for patients with chronic ischemic brain lesions primarily consists in improving cerebral blood flow, for which peripheral vasodilators and endothelium protection drugs are recommended: ready-to-administer pentoxifylline improves flow properties and microcirculation; original L-arginine improves cerebral circulatory dynamics by activating of endothelium-dependant mechanism of vasodilation and provides physiological angioprotection. The combination of electrolytes and citicoline provides for dual modulation of nerve pulse transmission, thus restoring cognitive, sensitive and motor functions of the CNS.
8. Diabetes mellitus is a «disease of civilization». It is developing in each of the 11 adults on the planet and causes 11% of the deaths each year. The primary link in the development of diabetic polyneuropathy is a microvasculature injury. A comprehensive approach to treatment of microvasculature injuries may provide for a stable and lasting remission. L-arginine hydrochloride improves endothelium function. Ready-to-administer pentoxifylline slows down aggregation of thrombocytes and erythrocytes. Hyperosmolar crystalloid solution eliminates edema and improves peripheral blood flow. Administration of parenteral Ethylmethylhydroxypyridine succinate, identical to the original, helps to reduce manifestations of polyneuropathy and level of anxiety.

9. Chronic kidney disease is another «silent killer»: 96% of people with light CKD and 48% with severe CKD have no idea about their disease. It is recommended to use GFR-EPI formula for estimation of kidney functional status. The target systolic arterial pressure for the patients with arterial hypertension and CRI is below 120 mm Hg. It is recommended to use «microcirculation trinity»: combination of L-arginine hydrochloride, ready-to-administer pentoxifylline and hyperosmolar crystalloid solution, to improve microvasculature injuries in case of CKD.

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