Results and discussion. A high risk of death is observed in the following clinical forms of COVID-2-2019: pneumonia with signs of respiratory failure (severe); critical illness, which includes acute respiratory distress syndrome, sepsis, septic shock.

The following syndromes play an important role in the pathogenesis of these pathologies: hypoxia, intoxication, systemic metabolic disorders and coagulopathies. As a result of severe and critical course of infection and the mentioned processes, multiple organ failure syndrome develops (which is often the direct cause of death) - a dangerous organ dysfunction caused by excessive immune response to infection, accompanied by multiple organ failure (also systemic inflammatory response syndrome).

The main symptoms of such organ dysfunction: coagulopathy, thrombocytopenia, acidosis, hyperbilirubinemia, markers of cytolysis, hypoxemia; arterial hypotension, disturbance of consciousness. Histologically, severe pneumonia (atypical with a predominant lesion of alveolocytes type 2; bacterial drain), hyperactive immune cytolysis, tissue ischemia, microvascular thrombosis, vasculitis.

Conclusions. The immediate cause of death in patients with COVID-2-2019 is often a syndrome of multiple organ failure, which develops mainly as a result of systemic microcirculation disorders. Aggravating factors are old age (from 60 years), the presence of concomitant pathological conditions (respiratory failure; cardiovascular, renal, respiratory diseases; diabetes, immunodeficiency, obesity, etc.). In order to reduce mortality in patients with COVID-2-2019, monitoring of coagulation parameters and blood cell composition, markers of cytolysis is recommended.

EXPERIMENTAL STUDY OF ANTI-INFLAMMATORY ACTIVITY OF THE ARISTOLOCHIA CLEMATITIS EXTRACTS

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Introduction. Aristolochia clematitis L. is an unofficial plant in Ukraine, but is widespread in natural conditions throughout our country. The roots (Radix Aristolochiae clematitis) and grass (Herba Aristolochiae clematitis) are used in folk medicine.

The Aristolochiae clematitis roots contain the alkaloids magnoflorin and aristolochine, sitosterol, aristolochic acid. The alkaloid aristoloquine, aristolochic acid, phenolic acids, flavonoids and other substances are present in the Aristolochiae clematitis grass. All parts of the plant contain essential oil, which includes u-pinene, kadinen, borneol, a-terpineol, linalylpronionate, cinnamon alcohol.

The results of experimental studies, which are presented in the modern literature, indicate the epithelializing and antimicrobial properties of Aristolochia clematitis L. when applied topically. Especially effective is the use of Aristolochia clematitis L. decoctions of the roots or herbs for washing wounds from insect bites, compresses for skin rashes, itching and puffiness of the skin, purulent wounds, ulcers and eczema.

The presence of the inflammatory process, as a pathological basis for the development of many diseases, led to the research of new herbal medicines to study the anti-inflammatory activity of extracts from the Aristolochia clematitis L. plant raw materials.

Aim. The purpose of this work is to study the anti-inflammatory properties of extracts from different vegetative parts of the Aristolochia clematitis L. on the model of carrageenan edema. To achieve this goal, the following tasks were solved: 1) to study the anti-inflammatory properties of various extracts of the Aristolochia clematitis L. in certain doses in a model of rats carrageenan edema; 2) compare the extracts provided by anti-inflammatory activity.

Materials and methods. The objects of the study were four hydrophilic extracts of the Aristolochia clematitis L., obtained in different ways from different vegetative parts: 1 - aqueous extract from the roots of the flowering Aristolochia clematitis L., 2 - water extract from the aboveground part, the flowering Aristolochia clematitis L., 3 - alcohol extract from the aboveground part, the flowering Aristolochia clematitis L., extraction of 70% ethanol, 4 - alcohol extract from the aboveground part, the flowering Aristolochia clematitis L., extraction of 96% ethanol.

The carregenous edema model is one of the pharmacological models for assessing the anti-inflammatory activity of substances and drugs. This model in rats was used in the conducted pharmacological studies. The study used 42 white nonlinear rats weighing 250 - 300 g. Rats were standardized by feeding factor and were kept in quarantine for two weeks before the study. Experimental animals were randomized into 7 groups (6 animals in each group): 1-4 groups, animals that were injected with the studied plant extracts at a dose of 35 mg / kg, which in screening studies showed its effectiveness; 5 - group of untreated animals (control pathology), 6 - group of animals treated with a drug with proven anti-inflammatory properties "Quercetin" at a dose of 10.0 mg / kg (corresponding to the effective dose of quercetin) (granules for oral use, produced by PJSC NVC Borshchahivsky HFZ "(Ukraine); 7 group - animals with edema, which were treated with a reference drug with anti-inflammatory action - diclofenac sodium (LLC" Kharkiv Pharmaceutical Enterprise "People's Health", Kharkiv, Ukraine) at a dose of 8 mg / kg.

Edema was caused in animals by subplantar administration of phlogogen - 1% carrageenan solution in an amount of 0.1 ml. Test substances were administered 1 hour before the introduction of phlogogen. The development of edema was assessed by volume increase. Paw volume was determined 1, 2 and 3 hours after phlogogen administration using a digital plethysmometer (IITC Life Science, USA) and displayed in cm3. Anti-inflammatory (anti-exudative) activity (APA) was expressed as a percentage of the degree of edema reduction in animals receiving the test drugs, compared with animals of the control pathology group and was calculated by the conventional formula. Statistical processing of the results was performed on a computer using the program "Statistica 6", with a confidence level of $p \leq 0.05$.

Results and discussion. The obtained data indicate that under the influence of phlogogen in animals of experimental groups, and especially in rats of the control pathology group, edema of the limb developed.

Previous administration to animals of the Aristolochia clematitis L.extracts led to an anti-inflammatory effect of varying severity.

It is known that in the pathogenesis of carrageenan inflammation in 1.5-5.5 hours after the introduction of phlogogen the leading role is played by Pg, which allows us to conclude about the studied extracts effect on the cyclooxygenase system.

Among the studied extracts of the Aristolochia clematitis L. at a dose of 35 mg / kg, the most pronounced antiexidative effect was shown by the alcohol extract from the aerial part of the flowering Aristolochia clematitis, extraction of 70% ethanol.

The use of this extract led to a maximum reduction of carrageenan edema in the third hour of the study by 2.3 times (anti-inflammatory activity was 62%). The aqueous extract from the aboveground part of the flowering Aristolochia clematitis L. showed the lowest anti-inflammatory activity in the selected dose (below 20%).

The use of the comparison drug diclofenac sodium had a more pronounced inhibitory effect on the cyclooxygenase pathway of conversion of arachidonic acid and, thus, reduced the intensity of synthesis of prostaglandins and other mediators in the inflammatory focus by 76%. Quercetin was significantly inferior to diclofenac sodium and alcoholic extracts of the Aristolochia clematitis on this model of inflammation. In our opinion, this phenomenon is explained by the absence in the mechanism of anti-inflammatory action of Quercetin of influence on COX-dependent link of inflammatory reaction as this means influences, first of all, a lipoxygenase way of transformation of arachidonic acid and leukotriene synthesis.

Conclusions. 1. The anti-inflammatory effect of four extracts from different vegetative parts of the Aristolochia clematitis was studied for the first time.

2. It was found that at the studied dose (35 mg/kg) extracts of the Aristolochia clematitis had an inhibitory effect on the cyclooxygenase pathway of arachidonic acid conversion and, thus, their use helped to reduce the synthesis of prostaglandins and other mediators in the inflammatory focus and led to anti-inflammatory effects.

3. In a number of the presented extracts at a dose of 35 mg / kg with the severity of the anti-inflammatory effect, the extracts can be arranged in the following order: alcohol extract from the aboveground part of the flowering Aristolochia clematitis, extraction 70% ethanol > alcohol extract from the aboveground part of the flowering Aristolochia clematitis, extraction 96% ethano l> aqueous extract from the roots of flowering Aristolochia clematitis > aqueous extract from the aboveground part of the flowering Aristolochia clematitis.

PATHOGENESIS OF CORONAVIRUS-INDUCED COAGULOPATHY IN COVID-19

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Introduction. Hypercoagulation can be viewed from the point of view of the Virchow triad. All three factors contributing to the development of thrombosis are also found in patients with severe COVID-19.

Endothelial cell damage. There is evidence of the direct introduction of the SARS-CoV-2 virus into endothelial cells, which can potentially lead to their damage. It has been hypothesized that endothelial injury, microvascular inflammation, endothelial exocytosis and/or endotheliitis play a major role in the pathogenesis of acute respiratory distress syndrome and organ failure in patients with severe COVID-19. Other observations suggested that neutrophil extracellular traps (NETs), a form of decondensed chromatin from dead or dying neutrophils, are involved in the prothrombotic state in COVID-19. Another source of endothelial damage is mediators of acute inflammatory reactions such as cytokines (for example, IL-6) and other factors of the acute phase of inflammation. Complement-dependent endothelial damage also contributes to it.

Violation of blood flow. Prolonged immobility can lead to hemostasis in any patient, regardless of whether or not they have COVID-19.

Hypercoagulation. Changes in several circulating prothrombotic factors are known in severe COVID-19 patients: increased factor VIII levels; increased levels of fibrinogen; circulating prothrombotic microparticles; neutrophil extracellular traps (NETs); increased blood viscosity.

Aim. Study of indicators of the hemostasis system in patients with severe COVID-19.