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VENOUS THROMBOEMBOLISM IN SURGICAL PRACTICE

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Abstract. The prevalence of deep vein thrombosis and mortality from PE (Pulmonary embolism) has remained at a fairly high level in recent decades, and the disability of patients with post-thrombophlebitis syndrome, trophic ulcers, and chronic pulmonary hypertension has been reaching epidemic proportions. Despite the variety of proposed regimens of the prescription of anticoagulants for the prevention of ATEC (acute thromboembolic complications), the the number of occurrence of the latter necessitates for a more detailed study of risk factors for ATEC and improvement of existing prevention and treatment regimens.

Key words: acute thromboembolic complication, anticoagulant therapy.

The problem of venous thrombosis has recently received considerable attention. Modern methods of diagnostics and treatment are being developed, new risk factors that influence the development of thrombosis and mechanisms that maintain a stable hemostasis are being studied. The economic costs of diagnosing and treating ATEC are considerable and have a steady tendency to increase worldwide [1, p. 20]. The classic statement that any disease is easier to prevent than cure is fully attributable to venous thrombosis, considering their widespread occurrence, serious complications, and serious consequences, economic and social significance. Adequate preventative measures can significantly reduce the incidence of postoperative thrombotic complications and reduce the postoperative lethality associated with PE. [1, p. 26; 3, p. 233].

Patients with urgent surgical pathology, especially with oncological pathology, should identify risk factors for the development of ATEC, prescribe the prevention or treatment of the latter according to approved standards (protocols) of medical care.

According to many pathological anatomical studies, in 50-80% of cases of pulmonary embolism is not determined in total and in some cases only a possible diagnosis is established. In this case, the mortality rate for incurable PE reaches 60-80%, while the diagnosis and treatment are up to 10-30% [4, p. 457]. The development of pulmonary embolism is six times more likely to be in patients with malignant swellings than patients without malignant swellings and PE, and is the second leading cause of death [3, p. 238].

Studying the molecular mechanisms of hemostasis allows to claim that there are genetically determined (inherited) and sometimes acquired defects in proteins that predispose to intravascular thrombus formation. Currently, a significant number of genetic defects of various coagulation factors have been identified: antithrombin III, protein C and S, heparin cofactor II, dysphibrinogenemia and others. In addition to genetically determined blood clotting defects, there are distinguished factors that can be both permanent and transient [4, p. 440]. Determination of hereditary thrombophilia is not a routine laboratory diagnosis; most authors recommend that it be performed in the following clinical situations:

Family anamnesis of VTE (venosus thromboembolism);

Recidivous and idiopathetic VTE;

VTE in juvenile age;

VTE precipitated by trivial risk factors (pregnancy etc.);

Venous thromboses of unusual localization (veins of internal organs, cerebral and others);

VTE associated with arterial thrombosis and recurrent miscarriage;

VTE affected by using oral contraceptives (less than 9 month) or hormone replacement therapy.

A number of diagnostic criteria are used for the diagnosis of PE [2, p.207]: clinical (cardiovascular, pulmonary-pleural, cerebral, abdominal); instrumental (electrocardiographic, radiographic, Doppler, angiographic, etc.) and laboratory (determination of D-dimer, troponin). Despite the variety of proposed regimens for the appointment of anticoagulants for the prevention of thromboembolic complications, the number of occurrences of the latest ones necessitates a more detailed improvement of the existing regimens for the prevention and treatment of this pathology.

In order to efficacy evaluation of providing medical care to patients with a surgical profile, we conducted a retrospective analysis of the results of treatment of patients with surgical, proctologic and urological pathology, according to the frequency of thromboembolic disorders (PE). This analysis was performed in patients being in inpatient treatment at the Municipal Noprofit Enterprise Dnipropetrovsk Sixth City Clinical Hospital, Dnipropetrovsk City Council providing emergency surgery for the last 5 years (2015-2019). The efficacy evaluation of anticoagulants was evaluated on the basis of objective and subjective indicators.

Risk factors for the emergence of ATEC (patient-conditioned and operative-conditioned) were evaluated by conventional methods [5, p.7]. Prevention and treatment of ATEC were performed according to the standards of the organization and professionally oriented protocols of providing medical care to patients with urgent surgical pathology of abdominal organs [2, p. 118].

For adequate evaluation of risk factors, according to medical records, common factors (congenital, acquired, mixed) were separately identified. The total number of patients who were in inpatient treatment in the surgical clinic, proctologic and urological departments for 5 years are 27771, 14849 of them (53,5%) were operated on, postoperative mortality was 448 patients (3.0%), total mortality was 989 patients (3,6%). (Table 1).

Table 1

Quality indicators of the provision of health care for patients with surgical pathology

No.	Indicator	2015yr.	2016yr.	2017yr.	2018yr.	2019yr.
1	Number of patients admitted to the hospital	5348	5638	5520	5495	5770
2	Operated patients	3037 (56,8%)	2907 (51,6%)	2779 (50,3%)	3095 (56,3%)	3031 (52,5%)
3	Postoperative mortality	107 (3,5%)	80 (2,8%)	108 (3,9%)	84 (2,7%)	69 (2,3%)
4	Total mortality	203 (3,8%)	189 (3,4%)	208 (3,7%)	193 (3,5%)	196 (3,4%)

According to the results of analysis of medical records: total number of patients with TEC (PE) are 98 (0,35%), a number of patients diagnosed during treatment are 56 (57,1%), a number of patients diagnosed during pathoanatomical examination are 42 (42,9%); in 72 patients, PE was the direct cause of death, 26 patients were cured by conservative methods in the intensive care unit.

According to nosology, patients with ATEC were divided in the following way:

1. 55 Surgical patients: 18 of them were operated on, 37 were not operated;
2. Patients of urological profile: 20, 8 of them were operated, 12 were not operated;
3. Patients of proctologic profile: 23, 12 of them were operated, 11 were not operated.

Postoperative lethality caused directly by the PE was 0.24% (38 patients).

All operated patients were taken prophylactic measures of thrombosis before surgery, depending on the identified risk group, namely:

- Low risk is early activization, elastic compression of the lower extremities;
- Moderate risk is early activization, elastic compression of the lower extremities, anticoagulant prophylactic therapy;
- High risk is early activization, elastic compression of the lower extremities, anticoagulant prophylactic therapy (direct anticoagulants in high doses) with the transition to indirect and correction of rheological disorders [5, p. 15].

For the prevention and treatment of patients, both unfractionated heparin and low molecular weight heparins were used, with mandatory elastic compression of the lower extremities in all patients [2, p. 312]. Non-operated patients received prophylactic therapy in 56.7% of cases (i.e. 34 patients), in the presence of laboratory (according to the hemostasis system) and clinical signs of hypercoagulation, according to the above regimens.

Of the 98 patients with ATEC, 56 (56.1%) had the main disease cancer, in most cases in the neglected form with distant metastases.

Conclusions

1. Patients with oncologic pathology are "potentially dangerous" for thromboembolic complications, they need to be prescribed anticoagulant therapy (according to the state of the hemostasis system) unfractionated heparin or low molecular weight heparins in a therapeutic dose of daily in combination with modern physical methods of prevention of ATEC.
2. In patients with urgent surgical pathology of the abdominal organs, the risk factors for acute thromboembolic disorders should be determined, additional laboratory tests should be performed, if it is necessary, for the early detection of thrombophilic conditions and, accordingly, for the prophylaxis or treatment of the latter according to approved standards.

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