A structural-logical scheme and design of a phase-metric study of microscopic images and blood films of laboratory rats has been developed. A model analysis of the polycrystalline structure of blood films of laboratory rats is proposed. Experimentally tested the optical arrangement of the system of phasometric mapping of microscopic images of blood films of laboratory rats. An album of maps of the distribution of phase magnitude of the points of the digital microscopic image of polycrystalline blood films of rats from control group 1 and research groups 2–4 with different severity of septic pathology was obtained. The statistical confidence of the differentiation of phase maps of the microscopic image of polycrystalline blood films of rats from control group 1 and research groups 2 - 4 with different severity of septic pathology was determined. The most diagnostic-sensitive statistical criteria for differentiating phase maps of the microscopic image of polycrystalline blood films of rats from control group 1 and research groups 2–4 with different septic pathology severity were found. The operational characteristics of the diagnostic strength of the method of polarization- phase microscopy of polycrystalline blood films of rats of the control and experimental groups are determined. Set balanced accuracy: differentiation of healthy and sepsis-infected rats; intergroup differentiation of the severity of the septic process in sick rats; intragroup differentiation of rat sepsis patients.

Sydorchuk R.I.

EARLY POSTOPERATIVE CHANGES OF PRIMARY HAEMOSTASIS UNDER ABDOMINAL SEPSIS

Department of General Surgery
Bukovinian State Medical University

Violations of hemostasis play significant role in pathogenesis of sepsis e.g. multiple organ damage caused by sepsis is created in part by the tight relationship between haemostasis and inflammation. Markers of coagulation have been found to have pathogenetic and prognostic value in sepsis patients. Both clinical and experimental studies prove importance of further investigation of coagulation haemostasis including its prognostic and therapeutic potential for abdominal sepsis.

The aim of the study was to analyze changes in the system of primary thrombocyte-vascular haemostasis in patients with peritoneogenic and pancreatogenic abdominal sepsis in early postoperative period.

The study covers 52 patients with peritoneogenic and pancreatogenic forms of abdominal sepsis, aged 18-69 years (41.93±3.47). The control group consisted of 17 patients who underwent elective surgery not related to abdominal cavity. Primary haemostasis analyzed according to prostacyclin (6-keto-$PGF_{1\alpha}$), thromboxane B_2 (T_xB_2) and soluble fibrin monomer complexes (ELISA). Bioethics requirements were strictly obeyed.

According to the obtained data, in control group patients the T_xB_2 level during 1 day after surgery was 156.11±12.19 pg/ml (n=9), and 6-keto-$PGF_{1\alpha}$ – 166,56±6.92 pg/ml (n=9). Under pancreatogenic sepsis, these figures grew: T_xB_2 – 48% ($p<0.01$, n=5), 6-keto-$PGF_{1\alpha}$ to 177.67±12.33 pg/ml (n=5); in peritoneogenic sepsis T_xB_2 was 209.50±16.99 pg/ml ($P<0.05$; n=8) and prostacyclin – 172.75±19.05 pg/ml (n=8).

Severe course of abdominal sepsis was marked by the highest concentration of T_xB_2 (384.11±49.52 pg/ml, $P<0.001$; n=9) with lowest level of 6-keto-$PGF_{1\alpha}$ (86.89±19.75 pg/ml, $P<0.001$; n=9). Soluble fibrin monomer complexes grew significantly: 5.40±0.31 mkg/ml (control, n=15); 12.40±1.73 mkg/ml (pancreatogenic sepsis, n=5; $P<0.001$); 22.40±4.67 mkg/ml (peritoneogenic sepsis, n=5; $P<0.001$); 54.50±5.21 mkg/ml (heavy sepsis, n=9; $P<0.001$). In addition, statistically reliable regressive dependencies between the soluble fibrin monomer complexes content in blood and T_xB_2 concentration (positive correlation) and the level of 6-keto-$PGF_{1\alpha}$ (negative relationship) were identified.

Significant changes revealed in the system of primary haemostasis in abdominal sepsis patients during the first 24 hours after surgery demonstrate the need for the active correction of thromboxane-prostacyclin system's violations to prevent postoperative thrombotic complications.