Commentary on the Article by R.F. Tepayev, O.B. Gordeyeva, V.V. Botvinyeva and O.K. Botvinyev "Hemorrhagic Syndrome in Babies"

Columnist:
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Hemostasis is a balanced system of pro- and anticoagulation mechanisms aimed at prevention of hemorrhages in the event of, on the one hand, blood vessel damage, on the other hand – uncontrollable thrombus formation. Vascular wall injuries are accompanied by platelet adhesion, activation and aggregation; this leads to formation of a thrombocytic thrombus and activation of the blood's hemocoagulation potential along with fibrination. In its turn, the anticoagulant system (proteins C and S, endogenous heparin, antithrombin III) limit the thrombus formation process and (together with the fibrinolytic system [plasminogen-plasmin]) maintain or recover patency of blood vessels.

Impairment of one or several hemostasis components leads to hemocoagulation disorders prevailed by bleeding or thrombus formation. There are hereditary (familial) forms of hemorrhagic conditions, which set on in childhood, and acquired forms, most of which are secondary. Most hereditary forms are related to defects of plasma blood coagulation factors, abnormalities of megakaryocytes and platelets; less often – to inadequacy of small blood vessels (telangiectasia, Olser-Weber-Rendu disease). The most common causes of acquired bleeding forms are DIC, immunological injuries of vascular walls and platelets and hemopoietic hypoplasia. Hemostatic disorders are mixed at some diseases due to overlay of DIC and associated with infectious-septic, immune, destructive or neoplastic processes.

The authors describe peculiarities of diagnosis and treatment of hemorrhagic conditions in infants – the most vulnerable group of patients in terms of development of both hemorrhagic and thrombotic complications. Despite the presence of the key hemostasis components in a neonate's blood, important quantitative and qualitative differences in the system are observed in premature neonates, term neonates, infants and adults; this fact served as a ground for defining hemostasis in infants as developmental hemostasis.

Given the specific target audience of the magazine, the article presents the main diagnostic algorithms based on the use of routine hemocoagulation tests accessible for most therapeutic pediatric institutions, as well as contemporary approaches to the therapy of hemorrhagic conditions in infants.