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50 Years Ago in *THE JOURNAL OF PEDIATRICS*

Diagnosis of Coagulation Defects in Reye Syndrome

Schwartz A. The coagulation defect in Reye's syndrome. *J Pediatr* 1971;78:326-8.

Fifty years ago in *The Journal*, Schwartz described a child with Reye syndrome, likely from a myxovirus, admitted to Yale-New Haven Hospital with sudden hemorrhagic diathesis. This child had prolonged prothrombin time and partial thromboplastin time and generally low levels of coagulation factors. Although the low levels of coagulation factors was suggestive of disseminated intravascular coagulation (DIC), the normal levels of factor VIII, normal platelet count, and absence of fibrin split products clinched the correct diagnosis of hepatic failure, allowing for appropriate therapy. Schwartz cautioned about the potentially deleterious effect of an incorrect diagnosis of DIC, which was heparin therapy in a bleeding child.

The world is currently in the midst of the COVID-19 pandemic. The multisystem inflammatory syndrome in children (MIS-C) is thought to be a manifestation of COVID-19, which is caused by a coronavirus. In contrast to Reye syndrome, thrombosis is a major concern in MIS-C. Bleeding is not common with MIS-C, but these children tend to have prolonged prothrombin time, low platelet count, and elevated levels of D-dimer, a fibrin split product.¹ A large proportion of these children receive heparin therapy to prevent thrombosis. At Yale-New Haven Children's Hospital and other children's hospital in the US, viscoelastic testing of coagulation with thromboelastography or thromboelastometry is now available. Reports in adults with COVID-19 suggest a prothrombotic profile using these tests. Studies to characterize the coagulation profile using viscoelastic testing in children with MIS-C are ongoing.

For the past 50 years, prothrombin time, partial thromboplastin time and platelet count have been the first-line workup for children with probable defects in hemostasis. Novel tests, such as viscoelastic testing, are now able to assess the combined effect of coagulation factors and platelets. Increasing experience with the use of these test may provide further insight into defects in hemostasis in other virus-related syndromes. Although heparin has been abandoned as a therapy for DIC, viscoelastic testing also may be used to titrate heparin to avoid its deleterious effect of bleeding.

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