D-dimer is a protein resulting from fibrin degradation. It is released into the circulation when clot degradation occurs and is therefore used as a marker for thromboembolic events and fibrinolysis. The main role of D-dimer lies in its negative predictive value for the exclusion of thromboembolic events, when its level is below 500 ng/mL. Because D-dimer functions as an inflammatory marker, various non-thromboembolic situations can contribute to an increase in its level, such as advanced age, pregnancy, postpartum period, neoplasms, renal insufficiency, and sepsis. Age is a crucial factor when considering D-dimer a thromboembolic marker. Healthy populations over 70 years of age have shown a 50% increase in D-dimer levels without correlation with thrombotic or inflammatory events.

During the COVID-19 pandemic, several studies have demonstrated a positive correlation of elevated D-dimer levels, prolonged coagulation time, and low platelet count with mortality from COVID-19. Although D-dimers lack high specificity as a diagnostic tool, they have been widely used as predictors of severity and complications in this setting, given that D-dimer tests are rapid, simple, and low-cost. However, hyperinflammation caused by SARS-CoV-2 infection can lead to an increase in D-dimer unrelated to thrombosis, which implies its correlation with other tests and caution in interpreting the results.

Children under 21 years of age develop less severe acute respiratory syndrome due to SARS-CoV-2 than adults, but with similar susceptibility to infection. The behavior of COVID-19 in children varies from asymptomatic forms and mild catarrhal symptoms to pediatric multisystem inflammatory syndrome (MIS-C).

MIS-C is particularly severe and characterized by prolonged high fever, rash, gastrointestinal symptoms, conjunctivitis, lymphadenopathy, irritability, and headache. A systemic inflammatory state is associated with elevated inflammation indices, neutrophilic leukocytosis, lymphopenia, and organ dysfunction, along with laboratory or epidemiological evidence of SARS-CoV-2 infection and exclusion of other microbiological causes. Some severe cases present with shock due to cardiac dysfunction, with or without myocarditis, aneurysm, and coronary artery thrombosis.

Is it possible to use D-dimer as a risk marker for thromboembolic events in the pediatric population with COVID-19? The systematic literature review proposed by Costa et al. analyzed 79 articles that included studies on the relationship between COVID-19 and thromboembolic events in pediatric patients (under 21 years of age), using D-dimer as a prognostic marker. Of these studies, 7 were considered for final evaluation. D-dimer was not a good parameter to assess the risk of thromboembolic events in the pediatric age group. The main limitations are that D-dimer increases in any type of inflammation and, therefore, is not a specific marker, and it increases even without the occurrence of thromboembolic events.

Some points are important to emphasize: severe presentation of COVID-19 in children is a rare event, and the risk of thromboembolic events is even rarer, ranging from 0.07 to 0.14 per 10,000 children per year. In the pediatric age group, contributing comorbidities for a thromboembolic event, such as atherosclerosis, diabetes, hypertension, and tobacco-related vasculopathy, are not present. Therefore, even in the presentation of a...
hyperinflammatory and prothrombotic state, such as in MIS-C, the pediatric patient would be at lower risk than the adult patient.\textsuperscript{7,10,12}

The evaluation of D-dimer as an inflammatory marker was demonstrated in another meta-analysis that analyzed 21 articles and found that D-dimer above the upper limit showed itself as a potential prognostic tool but with low positive correlation to assess length of hospital stay and clinical worsening. After the resolution of the inflammatory process of MIS-C, D-dimer returned to normal levels, with patients recovering without thrombotic sequelae.\textsuperscript{9}

Therefore, based on the available information, D-dimer in children can be used as a marker of inflammation, with low specificity and without a direct connection to an increased thrombotic risk. Its use as a marker for initiating or discontinuing antithrombotic prophylaxis in COVID-19 in children should be discouraged.