

VTE in Children and Adolescents

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Venous thromboembolism is relatively uncommon in children compared to adults. The hemostatic system in healthy children protects them from thrombosis. However, acquired underlying disease states as well as inherited prothrombotic disease states can tip the physiologic balance in favor of thrombosis. The infant and adolescent have higher rates of TE than other pediatric age groups. The neonate in particular has the highest incidence of thrombosis. Interventions to treat critically ill infants and children have resulted in an increase in TE associated with the use of central venous lines.

Treatment for infants and children is most often based upon studies extrapolated from adults. Due to differences in maturation of coagulation plasma proteins, utilization and clearance of drugs and difficulty with drug administration, adult trials do not always crossover well to children's regimens. However, until larger, prospective, randomized, control trials are done in pediatrics, guidelines for treatment will be based upon combined information from large adult trials, small pediatric studies, case reports and expert opinion.

Treatment has significant impact on thrombosis outcomes. The reported incidence of post thrombotic syndrome and the recurrence rate for VTE vary widely in different studies. To enhance outcome, treatment needs to be tailored to the patient and the clot. UFH and LMWH are the two drugs primarily used at present but newer oral agents and longer acting parenteral drugs are on the horizon for use in children.

Much information still needs to be learned about epidemiology, pathophysiology, treatment and response to treatment. Larger, multi-institutional, prospective collaborative studies are needed.

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