

The objective of this review is to establish evidence-based guidance for the management of CVC thrombosis” Park et al (2016).

Abstract:

Thrombotic occlusion of central venous catheters (CVCs) is a common problem in newborns. No guideline systematically addresses the diagnosis, management, and prevention of this complication.

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The objective of this review is to establish evidence-based guidance for the management of CVC thrombosis. A comprehensive literature search was conducted from 1948 to 2012. Twenty-six articles fulfilling four criteria - humans, neonates aged less than 28 days, CVC insertion, and English language - were included for analysis. The incidence of thrombosis was 9.2% (308/3332). Singly inserted umbilical venous catheters (UVCs) and peripherally inserted central catheters accounted for more than 80% of all CVCs. Frequently reported thrombotic sites were the hepatic vein, right atrium, and inferior vena cava. Symptoms included distal swelling of affected areas and thrombocytopenia. Increased length of catheter stay, infusion of blood products, and malpositioned UVCs were identified risk factors. The commonest diagnostic investigations confirming thrombosis were echocardiography and ultrasonography. Spontaneous resolution may occur in UVC-related thrombosis but warrants close monitoring. Thrombolysis with urokinase alone or combined with low molecular weight heparin might be effective and well tolerated. Prophylactic heparin increases the duration of catheter usability ($P < 0.005$, 95% confidence interval 0.35-0.81), decreases catheter occlusion, but may not uniformly prevent thrombosis. CVC-related thrombosis is an underreported complication because events in the majority occur silently. Currently, solid evidence-based recommendations for diagnosis and treatment are not possible. Well designed prospective studies are urgently required to establish a concrete investigational approach to CVC thrombosis and to institute well tolerated therapeutic modalities.

Reference:

Park, C.K., Paes, B.A., Nagel, K., Chan, A.K. and Murthy, P. (2016) Neonatal central venous catheter thrombosis: diagnosis, management, and outcome. *Blood Coagulation & Fibrinolysis*. July 29th. .

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