Abstract:

Background: Transfusion of blood products requires a vascular port. Use of an indwelling central venous catheter (CVC) provides this port readily and safely in general; however, potential risks require assessment.

Study Design and Methods: The objective was to examine septic reactions to blood transfusions performed via CVCs owing to subclinical microbial catheter colonization. All transfusion reactions that occurred from 2007 to 2011 at The University of Texas MD Anderson Cancer Center were analyzed and correlated with microbiology culture results. Data on the reactions, including vascular access via a catheter or peripheral venipuncture, were collected prospectively.

Results: A total of 999 reactions were reported, with an incidence of two per 1000 transfusion events. A total of 738 reactions occurred in 642 patients during transfusion through a CVC. Among them, 606 reactions occurred in patients that had cultures of blood samples drawn within 7 days before or after reaction. Sixty of these (9.9%) had at least one significant microorganism isolated from their catheters and/or peripheral blood. The blood culture results and timing suggested that these patients likely had catheter-related bloodstream infections caused by transfusion through a CVC with subclinical microbial colonization. Fever and chills occurred in 35 of these patients (58%), which resembled febrile nonhemolytic transfusion reactions. Culture results of the transfused blood products, although not performed in all cases, were mostly negative in these CVC-related reactions.

Conclusion: Blood transfusion through an indwelling CVC may lead to septic reaction owing to subclinical microbial colonization. This risk should be considered before transfusion and during investigation of transfusion reactions.

Reference: