



Intravenous literature: Walshe CM, Boner KS, Bourke J, Hone R, Phelan D. (2010) Diagnosis of catheter-related bloodstream infection in a total parenteral nutrition population: inclusion of sepsis defervescence after removal of culture-positive central venous catheter. *Journal of Hospital Infection*. Jun 14.

#### Abstract:

Defervescence of sepsis after removal of culture-positive central venous catheters (CVCs) has been advocated for diagnosis of catheter-related bloodstream infection (CRBSI) even without positive blood culture. However, most studies report CRBSI incidence only when blood cultures, and CVC tip, are positive (standard definition). We examined the effect of inclusion of defervescence criteria on CRBSI incidence in a total parenteral nutrition (TPN) population. The study was carried out in a 525 bed tertiary referral hospital for a period of 12 years. CRBSI incidence was compared between standard definition (positive CVC tip culture and positive blood culture) and when 'defervescence criteria' were included. Sepsis defervescence was defined as a fall in temperature, white cell count and sepsis resolution after CVC removal, with positive CVC tip culture, but negative blood cultures. CRBSI episodes in which a blood culture was omitted were excluded. The study population included 1365 patients in whom 2536 CVCs were used over a period of 15 234 CVC-days. There were 192 CRBSI episodes in 165 patients. In all, 152 CRBSI episodes met only the standard criteria for CRBSI whereas 40 episodes met the defervescence criteria. The standard definition alone resulted in a mean (+/- SD) incidence of 10.6+/-5.8 per 1000 CVC-days. This increased to 13+/-6.4 per 1000 CVC-days when defervescence criteria were included. Inclusion of

defervescence criteria increased CRBSI incidence by a mean of 2.5+/-1.4 episodes per 1000 days or 27% (95% CI: 1.61-3.339; P<0.001). This study implies that the scale of CRBSI may be higher than is currently recognised and that the blood culture positivity rate for CRBSI is 79% (152/192).

