

Case definition of Central venous catheter-Related Bloodstream Infection (CRBSI) in the PREZIES Surveillance

CRBSI: microbiologically-confirmed CVC-related bloodstream infection

Clinical symptoms [fever ($>38^{\circ}$), shivers, hypotension (systolic pressure <100 mmHg)]

And

peripheral venous blood culture is positive

And

positive (semi)quantitative culture of the Central Venous Catheter (CVC)- tip [>15 colony-forming units (cfu)] with identical microorganism

or

quantitative blood culture ratio CVC blood sample/peripheral blood sample > 5 ;

or

differential delay of positivity of blood cultures: CVC blood sample culture positive two hours or more before peripheral blood culture (blood samples drawn simultaneously);

or

positive culture with identical microorganism from pus from CVC insertion site

And

absence of other infection with identical microorganism.

CRBSI, category 1

Clinical symptoms [fever ($>38^{\circ}$), shivers, hypotension (systolic pressure <100 mmHg)]

And

positive qualitative culture of the CVC tip

And

peripheral venous blood culture positive with identical microorganism

And

absence of other infection with identical microorganism.

CRBSI, category 2

Clinical symptoms [fever ($>38^{\circ}$), shivers, hypotension (systolic pressure <100 mmHg)]

And

positive (semi)quantitative culture of the CVC tip (>15 cfu)

And

no peripheral venous blood sample obtained, however arterial blood culture positive with identical microorganism

And

absence of other infection with identical microorganism.

CRBSI, category 3

Clinical symptoms [fever ($>38^{\circ}$), shivers, hypotension (systolic pressure <100 mmHg)]

And

peripheral venous blood culture is positive or no blood cultures taken

And

positive qualitative or quantitative culture of the CVC tip with identical microorganism or no culture of the CVC tip taken

And

fever disappears within 24h after CVC removal

And

absence of other infection with identical microorganism.

CRBSI, category 4

Clinical symptoms [fever ($>38^{\circ}$), shivers, hypotension (systolic pressure <100 mmHg)]

And

positive peripheral venous blood culture

And

CVC remains in situ

And

fever disappears within 48 h after start of antibiotic treatment.

And

absence of other infection with identical microorganism

Notes:

- Catheter-related: the CVC was in situ < 48 hours before the onset of the BSI
- In Dutch clinical practice, CRBSI is usually investigated by culturing both peripheral blood and the CVC tip. If less optimal (laboratory) methods are used, the diagnostic CRBSI categories 1-4 are available (hierarchical structure).
- The CRBSI categories specify the laboratory method of culturing the CVC (semi-qualitative or quantitative) and the body site from which the blood culture is drawn (peripheral venous or arterial).
- The CVC and blood samples are preferentially drawn simultaneously or within 24 hours.