TOE considerations during COVID-19 Pandemic – SAB and other causes of infective endocarditis

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At TUH, TOE is currently used in many patients with Staphylococcus aureus bacteraemia to exclude IE (including cases where at least 4 weeks of IV antibiotics is already planned). In some cases, TOE is used to help determine whether a patient has uncomplicated IE and can be treated for 2 weeks (see UTD criteria for 2 weeks treatment below\*). With the current COVID-19 pandemic, however, the situation is unpredictable, workload is likely to be very heavy, and required PPE may be in short supply. We need to determine whether the current literature supports foregoing TOE in lower risk circumstances, and we need to anticipate a situation where our workforce demands may not support TOE in some higher risk cases.

UTD states that it “**may be reasonable to forgo TOE for circumstances in which all of the following conditions are met**”. During the COVID-19 outbreak, we should consider foregoing TOE for the following:

●Nosocomial or health care-associated acquisition of bacteremia

●Sterile follow-up blood cultures within four days after the initial positive culture

●No permanent intracardiac device

●No hemodialysis dependence

●No clinical signs of endocarditis or secondary foci of infection

●Removable focus of infection removed promptly, if present

●Defervescence within 72 hours of initial positive blood culture

UTD advises that the **pursuit of TOE is especially important in the setting of risk factors for IE.** While TOE in the following settings is particularly valuable, workforce limitations are likely to require consideration on a case by case basis according to circumstances at the time.

●Persistent *S. aureus* bacteremia despite appropriate antimicrobial therapy

●Unknown duration of bacteremia (ie, community-acquired infection)

●Presence of cardiac prosthetic material

●Presence of predisposing valvular abnormality

●Absence of evident removable source of bacteremia

●Hemodialysis dependency

●Evidence of infection involving the back (osteomyelitis, discitis, and/or epidural abscess)

●Presence of peripheral stigmata for IE

●Intravenous drug use

\*Note that according to UTD, patients who meet all of the following criteria for uncomplicated S aureus bacteremia can be considered for treatment with 14 days of antimicrobial therapy from the date of the first negative blood culture

* Infective endocarditis has been excluded via echocardiography. (See ['Echocardiography'](https://www.uptodate.com/contents/clinical-approach-to-staphylococcus-aureus-bacteremia-in-adults?source=autocomplete&index=0~4&search=staphylococcus%20aureus#H21662716) above.)
* No indwelling devices (such as prosthetic heart valves or vascular grafts) are present.
* Follow-up blood cultures drawn two to four days after initiating intravenous antistaphylococcal therapy and removing the presumed focus of infection (if present) are negative.
* have negative surveillance blood cultures within 72 hours after initiation of appropriate antimicrobial therapy
* The patient defervesced within 48 to 72 hours after initiating intravenous antistaphylococcal therapy and removal of the presumed focus of infection (such as debridement of soft tissue infection or intravascular catheter removal).
* There is no evidence of metastatic staphylococcal infection on physical examination.
* No signs of systemic staphylococcal infection