Incubation Period for Culture Positivity to Detect Septicaemia in Neonates

Dear Editor,

Apropos the correspondence published in the October 2005 issue of IJMM, the crucial variables that affect the conclusion of four day processing period detecting positive blood cultures of virtually all important infections have not been mentioned. This could confuse the paediatricians and microbiologists on this important issue, as these variables vary from one laboratory to another. The variables that affect the blood culture reporting include whether the neonate is asymptomatic/symptomatic, automated/non automated (classical) blood culture detection and identification systems are used, volume of blood inoculated, number of blood cultures and the constituents of the blood culture bottles. In this article, firstly no mention is made of the number of suspected sepsis neonates that were asymptomatic neonates suspected of having septicaemia require lesser observation period to rule out sepsis. Secondly, no mention is made of the type of blood culture system used in the study, whether automated or non automated (classical). Using a newer version of automated blood culture and identification system, the time to detect a positive blood culture could be reduced, but even such a system could fail to detect bacteria in blood. This study did not mention the type of blood culture system used, but is able to recover and identify bacterial isolates is less than 24 hours. Such rapid results would be highly unlikely to obtain, using a non automated blood culture system. Thirdly, no mention is made of the amount of neonatol
blood inoculated in the blood culture bottle, which is a critical factor in the diagnosis. Generally, increasing the amount of blood inoculated into a blood culture bottle, maintaining the optimal blood: broth ration, increase the isolation rate and the time to positivity.2,3

Lastly, no mention is made of the constituents of the blood culture bottles used in the study.2,3 Many laboratories in our use basal media as glucose broth instead of the recommended enriched media due the cost factor. This could increase the time to positivity in the blood cultures. Some laboratories expensive readymade media supplied by the companies which have proprietary additives to enhance the microbial growth, but equivalence among similar basic generic media from different commercial sources cannot be assumed.3 The other components usually added in the blood culture bottle as anticoagulant and additives to neutralize antimicrobials in blood culture bottle are not mentioned which can affect the isolation of different microbes. Therefore, a blood culture may be considered a ‘gold standard’ for sepsis, but the results of blood culture are better interpreted with reference to the different variables that affect its reporting.4,5

References


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