Molecular diagnostics in FUO

O.M.P. Jolobe

From the Medical Division, Manchester Medical Association, Simon Building, Brunswick Street, Manchester M13 9PL, UK.
email: oscarjolobe@yahoo.co.uk

Molecular diagnostics in FUO

Although the polymerase chain reaction (PCR) identifies the culprit pathogen in central nervous system infections,¹ and in infective endocarditis (IE),² it did not feature, even as an adjunct, in the work-up of patients recently reported with fever of unknown origin, in whom blood-stream infections were only identified by blood culture (BC).³ In the tertiary centre, where PCR was included in the evaluation of the cerebrospinal fluid (CSF), a commercially available multiplex PCR system generated a detection rate of 42.18% and clinical specificity of 100%.¹ The detection rate amounted to 10 times higher than conventional tests.¹ In suspected IE, among 53 patients with simultaneous BC and PCR of a blood sample, BCs and PCR were positive in 52.8% and 64.2% of patients, respectively.² Positive PCR results for cocci and fungi were obtained in 10 of the 25 examinees with negative BCs.²

BC is hampered by diagnostic delay, low positivity rate (amounting to approximately one third in patients with sepsis) and false negative results due to previous antibiotic use.³ Septifast, the most widely used PCR for blood-stream infections, can detect 9 gram positive cocci, 10 gram negative bacteria and 6 fungal species. A recent review also showed that ‘the impact of [previous] antibiotic administration in BCs is a major problem solved by Septifast.’³ Furthermore, in immunocompromised patients, PCR is significantly (P = 0.0339) superior to BCs in detecting polymicrobial infections.⁴ PCR also has a role in m tuberculosis bacteremia, either in the evaluation of a blood sample or in the evaluation of a urine sample. In the latter context, adjunctive evaluation of urine lipopolysaccharide (derived from the m tuberculosis cell wall) generates timely identification of 88% of HIV-positive subjects with positive m tuberculosis blood cultures.⁵

Conflict of interest: None declared.

References