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The Usefulness of Automated Blood Culture Method to Detect Causative Organisms Causing Peritonitis in PD Patients: Long-term Validity Assessment about Replacement of Conventional Culture Method

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Objectives : Peritonitis is a common complication of peritoneal dialysis (PD) and correct microbiological culturing of peritoneal effluent is most important to treat PD peritonitis.

Although rapid automated blood-culture techniques may not only increase isolation and identification rate but also could be save the time and labor, there have been a few studies with small number of samples. The objective of this study is to investigate the usefulness of automated blood culture method to detect causative organisms causing peritonitis in PD patients.

Methods : From January 2013 to July 2016, inoculation into automated blood culture bottles (automated blood culture method) were compared to direct inoculation of the centrifuged sediment (conventional method) in regard to agreement, sensitivity and the time required for reports. Among 1,635 CAPD fluids, requested for culture in patients with clinically suspicious PD peritonitis during study period, total 111, non-duplicated first encountered cases with diagnosed PD peritonitis were evaluated.

Results : The agreement of conventional method and automated blood culture method are 81.1 % (90/111). Fifteen cases were detected only in automated blood culture method and the additional positive rate was 13.6 %. Four cases were detected only in conventional method and the additional positive rate was 3.6 %. Different organisms were isolated in two cases (1.8%). The time required for reports was not significantly different in two methods.

Conclusions : The automated blood culture method to detect organisms causing CAPD peritonitis showed better diagnostic performance. In considering of convenience and sensitivity, the automated blood culture method rather than the conventional method is advocated in the PD peritonitis.

Keywords : peritoneal dialysis (PD), Peritonitis, Culture method