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Application evaluation of nested real-time PCR in detecting TP DNA from various biological samples of patients with syphilis

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Though finding of *T. palladium* in dark field microscope or positive specific and nonspecific *T. palladium* antibody was enough to make a diagnosis of syphilis, determination of early infection was a challenge at present. Polymerase chain reaction (PCR) was essential for syphilis diagnosis for those with negative serum antibody and organism as well. We reported that detection limit was 2 TP /ml for nest-real time-PCR (NR-PCR) (Fig.1), the present work is to evaluate application of NR-PCR in the detection of TP DNA from various biological samples of syphilitic patients. A total of 923 various samples including tissue swabs, serum the whole blood, earlobe blood and CSF were collected from 576 patients. Of those, 43 swabs from early syphilis lesions were detected for TP DNA by both Nest PCR (nPCR) and NR-PCR, the sensitivity of TP DNA detection by nPCR and NR-PCR was 79% (34/43), 72% (31/43) respectively, kappa was .81. The TP DNA positive rate for earlobe blood collected from latent syphilis and neurosyphilis were 70.3%, 26.7% respectively and a significant difference was observed ($P<0.01$). TP DNA positive rate detected by NR PCR for swabs, serum, whole blood collected during initiate visit was 84.2%, 66.9%, 42.4% respectively. In patients with positive TPPA, the sensitivity, specificity, positive predictive value, negative predictive value for NR PCR in detecting TP DNA in blood of primary stage was 72.5%, 75%, 99.6%, 2.9% respectively and Youden index 0.48, kappa value 0.024 (Table 1), least agreement was shown between NR PCR and syphilitic serological results in making syphilis diagnosis ($P<0.03$). It was concluded that the TP DNA positive rate for different samples group in various type syphilis was different from each other when detected by NR-PCR and there is less agreement between syphilitic serology diagnosis and NR-PCR in making syphilis diagnosis. They can be independently used clinically.

Biography

Xingdong Ye has his passion in improving the health and wellbeing, graduated from Jiangxi Gannan School of Medicine, China in 1988 and got his Master's degree in Sun Yatsum Medical University, Guangzhou in 1995, engaged in the prevention and treatment of syphilis. More than 100 professional academic papers had been published in the past decades and he has put forward to the prevention and control of syphilis in Guangzhou with his proposal entitled "1234" basic strategies after finishing the Guangzhou municipal major project on syphilis control and reported application of nested quantitative PCR in detecting TP DNA in the diagnosis of syphilis from various biological samples for the first time.

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