

论著

血浆(1,3)-β-D-葡聚糖对深部真菌感染诊断的临床意义

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摘要: 目的 研究血浆中(1,3)-β-D-葡聚糖检测和真菌培养对诊断深部真菌感染的临床应用价值。方法 对我院2009年8月~2010年7月长期使用广谱抗菌药物、免疫抑制剂以及皮质类固醇激素等,且临床出现感染症状的1 868例住院患者,在其抽静脉血做(1,3)-β-D-葡聚糖检测的同时留取血液或痰、中段尿、脓等分泌物标本做真菌培养。通过回顾性调查,了解使用抗真菌药物后患者临床症状是否缓解作为临床诊断标准,并以此为标准比较两种检测方法的差异。结果 1 868例患者中使用抗真菌药物后症状缓解757例,使用抗真菌药物后症状未缓解和临床未使用抗真菌药物症状缓解1 082例,无临床资料29例(剔除);实际有效病例1 839例。其中以20 pg/mL为临界值时(1,3)-β-D-葡聚糖含量检测阳性778例,阴性1 061例,以50 pg/mL为临界值时(1,3)-β-D-葡聚糖含量检测阳性623例,阴性1 216例;真菌培养阳性457例,阴性1 382例。血浆(1,3)-β-D-葡聚糖检测试验分别以20 pg/mL和50 pg/mL为临界值时,均得到较好的敏感度(分别为89.3%,74.9%)和特异度(分别为90.6%,94.8%),阳性预测值(86.9%和91.0%)和阴性预测值(92.4%和84.4%)均较高,无显著性差别( $P>0.05$ );真菌培养的敏感度(49.0%)较低但特异度较高(92.1%)阳性预测值和阴性预测值分别为81.2%和72.1%;两种方法联合检测后敏感度提高至93.0%,特异度为88.9%。结论 G试验的方法检测血浆(1,3)-β-D-葡聚糖较传统的真菌分离、培养与鉴定方法简便,快速,阳性率高,但有时发生假阳性。传统的真菌培养方法虽敏感性低,但特异性高,建议临床在诊断深部真菌感染时,同时行血浆(1,3)-β-D-葡聚糖检测及真菌镜检和培养等检查以提高侵袭性真菌感染诊断的敏感性和特异性。

关键词: (1,3)-β-D-葡聚糖 深部真菌感染 真菌培养

Clinical value of(1,3)-β-D-glucan in plasma on the diagnosis of deep fungal infection

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Abstract: Objective To study the value of plasma(1,3)-β-D-glucan and fungal culture on the diagnosis of deep fungal infection.Methods Retrospective investigation were performed on 1 868 patients with fever and treatment of immunosuppressant,corticosteroid or wide-spectrum antibiotics for a long time from August 2009 to July 2010.(1,3)-β-D-glucan concentration in plasm and culture results of peripheral blood,respiratory tract,urinary tract and intestinal canal were analysed.Results Symptoms of 757 cases in 1 868 patients were relieved after antifungal treatment.Other 1 082 cases,showed no improvement or received no antifungal drugs.Another 29 cases(eliminate) had no clinical data.In the 1 839 valuble cases,the detection ratio of(1,3)-β-D-glucan was 778/1 061 with 20 pg/mL as critical value,and 623/1 216 with 50 pg/mL as critical value respectively.Positive to negative rate in fungal culture was 457/1 382.Sensitivity(89.3%,74.9%),specificity(90.6%,94.8%),positive predictive value(PPV,86.9%,91.0%) and negative predictive value(NPV,92.4%,84.4%) obtained by different critical value showed no significal differences( $P>0.05$ ).The sensitivity,specificity,PPV and NPV of fungal culture were 49.0%,92.1%,81.2% and 72.1% respectively.The sensitivity and specificity raised to 93.0% and 88.9% after combination of the two methods.Conclusions G-test for(1,3)-β-D-glucan detection is simple,rapid with high positive rate of fungi detection.It is suggested that G-test,fungal dtermination should be combine in the diagnosis of deep fungal infection for satisfied sensitivity and specificity.

Keywords: (1,3)-β-D-glucan deep fungal infection fungal culture

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