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浙江省5例输入性疟疾误诊病例的病原学诊断分析

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Species Identification in 5 Imported Cases Previously Diagnosed as Vivax Malaria by Parasitological and Nested PCR Techniques

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摘要 目的 对浙江省5例输入性疟疾误诊病例进行病原学诊断和鉴定。 方法 收集浙江省5例前期误诊为输入性间日疟患者的流行病学资料和血样，进行镜检、快速疟疾诊断试纸条检测和巢氏PCR检测（采用疟原虫属特异性引物和种特异性引物），并将PCR扩增片段测序后，与GenBank中已有的序列进行Blast比对分析。 结果 5例患者均为自非洲的归国人员，其中3例归国前有疟疾发病史。镜检结果显示，4份血样为卵形疟原虫感染，1份（病例1）为卵形疟原虫和间日疟原虫混合感染。快速疟疾诊断试纸条检测结果均为疟原虫阴性。巢氏PCR检测结果显示，5份血样的全血DNA均扩增出卵形疟原虫特异性条带（800 bp），其中1份血样（病例1）同时还扩增出间日疟原虫特异性条带（120 bp）。测序序列经Blast比对，5份血样的扩增片段序列与卵形疟原虫SSU RNA部分序列的同源性均为99%，其中1份血样（病例1）的另一扩增片段序列与间日疟原虫SV5 18S rRNA部分序列的同源性为99%。 结论 5例输入性疟疾病例，4例为卵形疟原虫感染，1例为卵形疟原虫和间日疟原虫混合感染。

关键词： 疟疾 镜检 快速疟疾诊断试纸条 巢氏PCR

Abstract： Objective To identify the species of malaria parasites in 5 imported cases previously diagnosed as vivax malaria. Methods Epidemiological information and blood samples were collected from five patients who returned from Africa and were diagnosed as vivax malaria. The detection was conducted by microscopy, right VIEW rapid malaria test (RDTs) and nested PCR with Plasmodium genus-specific and species-specific primers. The amplified products were sequenced and Blast analysis was performed. Results Three of the 5 cases had a history of malaria attack. Microscopically, 4 cases were confirmed as Plasmodium ovale infection, 1(case 1) was co-infected with P. vivax and P. ovale. All 5 cases showed negative RDT results. Nested PCR detection revealed that the 5 cases had a P. ovale-specific fragment(800 bp), while case 1 had a P. vivax-specific fragment(120 bp) concurrently. Blast analysis showed that the amplified sequence of the 5 cases had a high sequence homology(99%) with P. ovale gene for small subunit ribosomal RNA from GenBank, and that of case 1 also shared 99% homology with P. vivax isolate SV5 18S ribosomal RNA gene (GenBank accession number: JQ627157.1). Conclusion Among the five cases, four were infected by Plasmodium ovale, and one was co-infected with both P. vivax and P. ovale.

Keywords： Malaria Microscopic examination Right VIEW rapid malaria test Nested PCR

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