



中缅边境地区恶性疟原虫对氯喹、哌喹、咯萘啶敏感性的体外测定

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In Vitro Sensitivity of *Plasmodium falciparum* Isolates from China-Myanmar Border Region to Chloroquine, Piperaquine and Pyronaridine

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摘要

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摘要 目的 了解中缅边境地区恶性疟原虫 (*Plasmodium falciparum*) 对氯喹、哌喹和咯萘啶敏感性的变化。方法 2009年9~12月在中缅边境的缅甸拉咱市采集了51份恶性疟血样, 采用Rieckmann体外微量测定法进行药物敏感性测定。结果 敏感性测定结果有效的42份血样中, 其恶性疟原虫对氯喹、哌喹和咯萘啶的抗性率分别为95.2%、7.1%和54.8%, 半数抑制量 (ID_{50}) 分别为320.5、128.2和96.0 nmol/L。在抗咯萘啶的23份血样中, 对氯喹和哌喹的交叉抗性率分别为91.3%(21/23)和13.0%(3/23); 抗氯喹的40份血样中, 对哌喹和咯萘啶的交叉抗性率分别为7.5%(3/40)和52.5%(21/40); 抗哌喹的3份血样中, 对氯喹和咯萘啶的交叉抗性率均为100%。结论 在缅甸拉咱市调查点流行的恶性疟原虫对氯喹已普遍产生抗性, 约半数对咯萘啶具有抗性, 多数对哌喹则敏感。

关键词: 恶性疟原虫 敏感性 体外微量测定 氯喹 哌喹 咯萘啶

Abstract: Objective To assess the in vitro sensitivity of *Plasmodium falciparum* to chloroquine, piperaquine and pyronaridine in China-Myanmar border area. Methods Fifty-one blood specimens of *P. falciparum* isolates were collected from Laza City of Myanmar during September to December in 2009, and the sensitivity of the parasites to the drugs was detected by Rieckmann's in vitro microtest. Results Among the 42 blood samples with valid results of sensitivity test, the resistance rate to chloroquine, piperaquine and pyronaridine was 95.2%, 7.1%, and 54.8%, with a corresponding 50% inhibition dose (ID_{50}) of 320.5, 128.2, and 96.0 nmol/L, respectively. Pyronaridine-resistant *P. falciparum* exhibited some degree of cross-resistance to chloroquine [91.3%(21/23)] and piperaquine [13.0%(3/23)], and chloroquine-resistant *P. falciparum* showed cross-resistance to piperaquine [7.5%(3/40)] and pyronaridine [52.5%(21/40)]. High level of cross-resistance was present to chloroquine (100%) and pyronaridine (100%) in piperaquine-resistant *P. falciparum*. Conclusion In Laza City, *P. falciparum* shows high resistance to chloroquine, half isolates are resistant to pyronaridine, and most isolates are still sensitive to piperaquine.

Keywords: *Plasmodium falciparum*; Sensitivity; *In vitro* microtest; Chloroquine; Piperaquine; Pyronaridine

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