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移动百分位数法在内脏利什曼病流行区疫情监测预警中的初步应用

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Preliminary Application of Moving Percentile Method on Surveillance and Early-Warning on Visceral Leishmaniasis in Endemic Areas

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摘要 目的 初步探索移动百分位数法在新疆喀什地区内脏利什曼病流行区疫情监测预警中的应用，并评价其效果。 方法 以喀什地区12个县（市）内脏利什曼病2006年1月1日至2012年12月31日疾病监测信息管理系统数据为基础，采用移动百分位数法对网报数据进行逐月探测，分别计算第50百分位数（P50）、第70百分位数（P70）和第90百分位数（P90），并绘制预警控制图，将P70作为判定疫情出现的预警阈值，当月发病数大于历史基线数据的P70时，产生预警信号。计算该法的灵敏度、特异度和阳性预测值，并评价预警效果。 结果 喀什地区2008年和2009年的内脏利什曼病病例为61.0%（539/884），9～12月约占总发病数的发病高峰，病例数为51.9%（459/884），主要危及0～3岁的婴幼儿，占62.7%（554/884）。移动百分位数法累计进行58次探测，17次探测的当月发病数超过历史基线发病数的P70，其中有9次探测的当月发病数超过历史基线发病数的P90。根据研究期间疫情的实际发生情况，以P70为预警阈值，移动百分位数法对11次疫情中的10次发出了预警信号，预警灵敏度为90.9%(10/11)；对不存在疫情的47次中的7次进行了错误预警，预警特异度为85.1%（40/47）；累计发出的17次预警信号中有10次被证实出现疫情，阳性预测值为58.8%（10/17）。 结论 移动百分位数法能够对喀什地区内脏利什曼病的疫情进行有效监测和预警。

关键词： 移动百分位数法 内脏利什曼病 喀什地区 监测 预警

Abstract： Objective To apply moving percentile method on surveillance and early-warning on visceral leishmaniasis in Kashgar Region and evaluate its effect. Methods Incidence data of visceral leishmaniasis in Kashgar Region were collected from the National Web-based Infectious Diseases Report System. Monthly detection was carried out by using moving percentile method. The 50th percentile（P50）, 70th percentile（P70） and 90th percentile（P90） of historical baseline data were calculated for drawing a control chart, and P70 was adopted as the warning threshold to determine whether an epidemic would appear. If the number of cases in one month is higher than the corresponding P70 of historical baseline data, the warning signal will be generated. The sensitivity, specificity and positive predictive value were calculated for the evaluation of early-warning effect. Results During the study period, 61.0% cases were reported in the year of 2008 and 2009, the incidence peak was from September to December, accounting for 51.9%, and infants under 3 years old were the population most threatened by visceral leishmaniasis, accounting for 62.7%. A total of 58 detections were performed, and 17 warning signals were generated by the threshold on P70. Among them, the numbers of cases in 9 detections were higher than the corresponding P90 of historical-baseline data. Based on the actually epidemic status of visceral leishmaniasis in study period, according to the threshold on P70, a total of 10 warning signals of 11 epidemics were detected, and the sensitivity of the warning model was 90.9% （10/11）. 7 wrongly signals of 47 non-epidemics were detected, and the specificity was 85.1%（40/47）. 10 of 17 signals were proved to be correct, and the positive predictive value was 58.8%（10/17）. Conclusion The moving percentile method can effectively perform surveillance and early-warning on visceral leishmaniasis in Kashgar Region.

Keywords： Moving percentile method Visceral leishmaniasis Kashgar Region Surveillance Warning

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