热带病学术热点追踪报告

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目　录

一、国际热带病热点研究

1. 疟疾相关

（1）*African origin of the malaria parasite Plasmodium vivax.*

Abstract[*]

Plasmodium vivax is the leading cause of human malaria in Asia and Latin America but is absent from most of central Africa due to the near fixation of a mutation that inhibits the expression of its receptor, the Duffy antigen, on human erythrocytes. The emergence of this protective allele is not understood because P. vivax is believed to have originated in Asia. Here we show, using a non-invasive approach, that wild chimpanzees and gorillas throughout central Africa are endemically infected with parasites that are closely related to human P. vivax. Sequence analyses reveal that ape parasites lack host specificity and are much more diverse than human parasites, which form a monophyletic lineage within the ape parasite radiation. These findings indicate that human P. vivax is of African origin and likely selected for the Duffy-negative mutation. All extant human P. vivax parasites are derived from a single ancestor that escaped out of Africa [1].

（2）*Patient-, health worker-, and health facility-level determinants of correct malaria case management at publicly funded health facilities in Malawi: results from a nationally representative health facility survey.*

Abstract

Prior to the widespread roll-out of malaria rapid diagnostic tests (RDTs) in late 2011, a national, cross-sectional, complex-sample, health facility survey was conducted in Malawi to assess patient-, health worker-, and health facility-level

[*] 为了给读者提供更简明扼要的信息，本报告中的英文摘要均经过编辑和精简。

factors associated with malaria case management quality using multivariate Poisson regression models. Introduction of RDTs holds potential to improve malaria case management in Malawi, but health workers must systematically assess all patients for fever, and then test and treat accordingly, otherwise, malaria control programmes might miss an opportunity to dramatically improve malaria case management, despite better diagnostic tools [2].

（3）*Sickle cell anemia with malaria: a rare case report.*

Abstract

Sickle cell disease is the prototype of hereditary hemoglobinopathies, characterized by the production of structurally abnormal hemoglobin. Sickle cell anemia results from a point mutation that leads to substitution of valine for glutamic acid at the sixth position of the β globin chain. We report a young male admitted with fever and weakness for 3 days. Hematological test reveals Plasmodium falciparum malaria parasite and sickle cell anemia. Patient was treated and got cured from malaria and discharged [3].

（4）*Frequency of Severe Malaria and Invasive Bacterial Infections among Children Admitted to a Rural Hospital in Burkina Faso.*

Abstract

We assessed the frequency of severe malaria (microscopically confirmed, according to World Health Organization definitions) and IBI, and the species distribution and antibiotic resistance of the bacterial pathogens causing IBI. The conclusion is that although severe malaria was the main cause of illness, IBI were not uncommon and had higher case-fatality rates. The high frequency, antibiotic resistance rates and mortality rates of community acquired IBI require improvement in hygiene, better diagnostic methods and revision of current treatment guidelines. [4].

（5）*The Association between Malaria and Iron Status or Supplementation in Pregnancy: A Systematic Review and Meta-Analysis.*

Abstract

We reviewed the evidence in pregnancy of the association between malaria and markers of iron status, iron supplementation or parenteral treatment. Iron supplementation was associated with a temporal increase in P vivax, but not with an increased risk of P. falciparum; however, data are insufficient to rule out the potential for an increased risk of P. falciparum. Iron deficiency was associated with a decreased malaria risk in pregnancy only when measured with ferritin. Until there is more evidence, it is prudent to provide iron in combination with malaria prevention during pregnancy [5].

2. 血吸虫相关

（1）*Cellular and chemokine-mediated regulation in schistosome-induced hepatic pathology.*

Abstract

In hepatic schistosomiasis, pathology arises when schistosome eggs become lodged in the host liver, evoking an interleukin 4 (IL-4)- and IL-13-mediated dominant CD4+ Th2 immune response. This response leads to the development of granulomas and fibrosis, with eosinophils, neutrophils, macrophages, hepatic stellate cells, and lymphocytes all identified as major cellular contributors to these events. This review outlines the cellular and molecular mechanisms of hepatic schistosomiasis, with an emphasis on the major cellular components and their release of chemokines. The differences between Schistosoma mansoni- and Schistosoma japonicum-induced hepatic granuloma are also discussed. This comprehensive overview of the processes associated with hepatic schistosomiasis may provide new insights into improved treatment for both schistosomiasis and other granulofibrotic diseases [6].

（2）*The Schistosoma japonicum self-cure phenomenon in water buffaloes: potential impact on the control and elimination of schistosomiasis in China.*

Abstract

Schistosomiasis japonica, caused by Schistosoma japonicum, is an important zoonotic disease in China, the Philippines and small pockets of Indonesia. A number of studies have shown that in the period following S. japonicum infection, the worm burden drops sharply in water buffaloes and some other animal hosts such as pigs. This is due to a self-cure phenomenon whereby there is parasite clearance by both immune and non-immune factors. Here we review studies investigating the self-cure effect, paying particular attention to S. japonicum infection in water buffaloes, and discuss its potential impact on the future schistosomiasis control and elimination efforts in China. Further understanding of the mechanism of self-cure in water buffaloes could be important for future schistosome vaccine design and delivery [7].

（3）*Antibodies are involved in the protective immunity induced in mice by Schistosoma mansoni schistosomula tegument (Smteg) immunization.*

Abstract

The Schistosoma mansoni schistosomula tegument (Smteg) plays an important role in triggering the host immune response and mice immunization with Smteg formulated with Freunds adjuvant or alum + CpG induce partial protection against S. mansoni infection associated with an increased antibody production. In this study, we investigated the role of these antibodies in parasite killing both in vitro and in vivo. We demonstrated that these antibodies were able to bind to the surface of S. mansoni recently transformed schistosomula and that these antibodies significantly increase the percentage of schistosomula killed in vitro by complement activation. Passive transference of immune sera decreased the parasite burden and the number of eggs trapped in the organs of mice that received sera containing anti-Smteg

antibodies. These results demonstrate that antibodies specific to surface tegumental antigens are involved in parasite elimination in mice immunized with Smteg [8].

3. 其他寄生虫相关

（1）*Biopsy proven acute tubular necrosis due to rhabdomyolysis in a dengue Fever patient: a case report and review of literature.*

Abstract

We report a case of dengue fever-induced AKI associated to rhabdomyolysis with a renal biopsy showing acute tubular necrosis (ATN) and renal deposition of myoglobin. A 28-year-old patient who presented dengue fever (DF) complicated by severe AKI and rhabdomyolysis is described. A renal biopsy revealed ATN with positive staining for myoglobin in the renal tubuli. The patient was discharged with recovered renal function. In conclusion, this case report described a biopsy proven ATN associated to DF-induced rhabdomyolysis, in which renal deposition of myoglobin was demonstrated. We suggest that serum creatine phosphokinase should be monitored in DF patients to allow for an early diagnosis of rhabdomyolysis and the institution of renal protective measures [9].

（2）*Rapid evolution of reduced receptivity to interspecific mating in the dengue vector Aedes aegypti in response to satyrization by invasive Aedes albopictus.*

Abstract

In this paper we examine the effect of reproductive interference on the dynamics of two mosquito vectors of public health concern and add to the growing literature on the strength and speed with which interspecific reproductive interference may drive evolution. Here we report that A. aegypti *from Tucson, Arizona (USA), where*A. albopictus *are not known to occur, are satyrization-susceptible. We also demonstrate that satyrization-resistant* A. aegypti *females derived from selection experiments are significantly slower to mate with conspecific males, suggesting a cost for the evolution of satyrization-resistance. Results show how interspecific interactions*

between these vector species are rapidly evolving, with implications for the arboviral diseases, especially dengueand chikungunya, which they transmit [10].

（3）*Post kala-azar dermal leishmaniasis: an unresolved mystery.*

Abstract

Post kala-azar dermal leishmaniasis (PKDL), a cutaneous sequela of visceral leishmaniasis (VL), develops in some patients alongside but more commonly after apparent cure from VL. In view of the pivotal role of PKDL patients in the transmission of VL, here we review clinical, epidemiological, parasitological, and immunological perspectives of this disease, focusing on five hypotheses to explain the development of PKDL: (i) the role of antimonial drugs; (ii) UV-induced skin damage; (iii) reinfection; (iv) organ specific failure of memory T cell responses; and (v) genetic susceptibility of the host. This review will enable researchers and clinicians to explore the unresolved mystery of PKDL and provide a framework for future application of 'omic' approaches for the control and eventual elimination of VL [11].

（4）*Long-term disseminated recurrence in spinal hydatid cyst: a case report.*

Abstract

We report a 36-year-old patient. The patient was operated previously for hydatid cyst through laminectomy 13 years ago. After 13 years of surgery, the patient was admitted to our clinic with progressive paraparesis. Radiological evaluation revealed multicystic lesions affecting T4 and T5 vertebrae as well as the posterior thoracic wall and paravertebral musculature. Serological findings were also compatible with a hydatid cyst. The patient underwent surgical treatment; the cystic lesions were removed, and vertebral stabilization was provided. The treatment of hydatid cyst in the spine is challenging. Particularly in cases with vertebral involvement, spinal instability and recurrence are the main handicap. Preoperative and postoperative antihelminthic treatment as well as close clinical, radiological and serological follow up in postoperative period is important to avoid recurrence risk [12].

二、国内热带病热点研究

1. 疟疾相关

（1）2012 年广西疟疾流行状况分析

【摘要】*

收集整理广西 2012 年中国疾病信息网络直报系统数据及各市县监测数据，并采用 Excel 2003 版软件对数据进行图表统计分析。分析结果为 2012 年在广西当地居民和流动人口中发现疟疾病人共 220 例，其中当地居民间日疟病例 1 例，恶性疟占 78.64%（173/220）。219 例流动人口疟疾病例中有 191 例在非洲 7 个国家感染，恶性疟占 87.44%（167/191），28 例在东南亚 6 个国家感染，恶性疟占 21.43%（6/28），其中南宁市上林县病例占总病例的 52.73%（116/220）。2012 年广西疟疾病例与 2011 年相比增加了 96.43%，加强对非洲务工返乡人员的疟疾监测，预防疟疾危重和死亡病例增多是其工作重点[13]。

（2）荧光定量 PCR 技术在疟疾诊断中的应用

【摘要】

疟疾是一种严重危害人类健康和生命的疾病，我国输入性疟疾呈上升趋势，近年来国内外应用荧光定量 PCR 技术进行疟疾的快速检测和分型，在低密度疟原虫感染水平的检测更为敏感。荧光探针法是利用探针与靶序列特异杂交来指示扩增产物的增加，特异性高，但试剂价格昂贵，而且对样本处理有特殊要求。荧光染料法是利用它结合到双链 DNA 发射荧光信号指示扩增产物的增加，简便易行，相对便宜，但是不能用于多重检测。随着荧光定量 PCR 技术的不断发展，在标本处理、标记技术等领域有了新的进展，并在疟原虫耐药性监测方面有广泛应用[14]。

*为了给读者提供更简明扼要的信息，本报告中的中文摘要均经过编辑和精简。

（3）Balb/c 小鼠 PD-1 敲除后抑制疟原虫生长及其机制初探

【摘要】

探讨 PD-1 KO（knock out）对约氏疟原虫 P.y17XL 增殖的影响及其可能的作用机制。感染约氏疟原虫 P.y17XL 后，比较 WT 和 PD-1 KO 小鼠的存活率及其体内的原虫血症；然后，流式细胞技术检测约氏疟原虫 P.y17XL 感染能否诱导 WT 小鼠巨噬细胞、DC、中性粒细胞和活化的 CD4+T 细胞表面 PD-1 表达；最后比较感染约氏疟原虫 P.y17XL 的 WT 和 PD-1 KO 小鼠的脾脏 CD4+T 细胞功能以及血清中的抗体水平。结论为 PD-1 KO 后能提高感染小鼠的存活率，增强其清除红内期疟原虫的能力；其机制可能与 PD-1 KO 小鼠血清中抗体水平升高有一定的关系[15]。

2. 血吸虫相关

（1）白细胞介素 18 在慢性结肠血吸虫病肠黏膜中的表达及意义

【摘要】

研究慢性结肠血吸虫病患者结肠黏膜中白细胞介素 18（IL-18）的表达情况及与性别、年龄的关系。方法为取 50 例慢性结肠血吸虫病病理标本，12 例正常者为对照组。所有研究对象行全结肠镜检查，经病理确诊为慢性结肠血吸虫病。正常对照组结肠镜检查，经肠镜和病理确诊正常肠黏膜 3-5 块作为正常对照。所有组织标本常规石蜡包埋，常规切片，苏木精－伊红染色法（HE）染色。采用免疫组织化学链霉菌抗生物素蛋白－过氧化物酶连结法（SP 法）检测血吸虫病组及正常对照组结肠黏膜中 IL-18 的表达情况，采用同济大学千屏影像 HPIA-2000 高清晰度病理图文分析系统进行分析。结果为慢性结肠血吸虫病患者结肠黏膜中 IL-18 的表达较正常结肠黏膜升高，但慢性结肠血吸虫病患者结肠黏膜中 IL-18 的表达与性别、年龄无关[16]。

（2）三种血吸虫诊断试剂联合检测对血吸虫病的诊断价值

【摘要】

探讨血吸虫循环抗原、血吸虫抗体及血吸虫虫卵抗体联合检测对血吸虫病诊断的价值。方法是使用血吸虫循环抗原测定试剂盒［酶联免疫吸附试验(ELISA)］、血吸虫抗体(IgG)检测试剂盒［胶体染料法(DDIA)］和血吸虫虫卵抗体检测试剂盒［胶体金免疫渗滤斑点法(DIGFA)］3 种试剂对 295 例慢性血吸虫病患者、53 例晚期血吸虫病患者和 100 名健康体检者进行检测和分析。结果为 ELISA + DDIA 联合检测可使敏感性提高到 80．3%,DDIA + DIGFA 联合检测可使敏感性提高到 93． 9%，ELISA + DDIA + DIGFA 联合检测可使敏感性提高到 99． 3%，明显优于单项检测。结论是 3 种试剂联合检测对提高血吸虫病的检出率具有重要的价值[17]。

（3）日本血吸虫性别特异性候选基因的生物信息学分析

【摘要】

运用生物信息学方法对日本血吸虫性别特异性候选基因 SJCHGC06309(登录号为 AY813032) 进行分析，为该基因的进一步研究奠定基础。 利用“数据库消减杂交”方法筛选出在日本血吸虫雄虫中特异表达的候选基因 AY813032，使用生物信息学软件分析该基因的开放阅读框(ORF)， 细胞定位、蛋白序列等特征，并预测该基因的结构和功能。结果为 AY813032 蛋白由 287 个氨基酸编码，属于 Cw f15/ Cw c15 结构域家族，定位于细胞核，有 8 个磷酸化位点，理论等电点(pI)为 5. 10，分子量为 32. 17 kDa，该蛋白在日本与曼氏血吸虫之间具有较高保守性。结论是 AY813032 基因为日本血吸虫性别特异性候选基因，可能与日本血吸虫性别发育相关[18]。

（4）长江武汉段江滩鼠类日本血吸虫感染调查

【摘要】

初步了解鼠类在武汉市感染性钉螺形成中的作用。用鼠夹法捕获野鼠，调查武汉市部分江滩的鼠类分布，对捕获鼠进行分类并解剖观察血吸虫感染情况。结

果为共放置鼠夹 340 个，捕获鼠类 34 只，均为黑线姬鼠。经解剖未发现血吸虫感染。结论是鼠类在长江武汉段江滩感染性钉螺形成中的作用较小[19]。

3. 其他寄生虫相关

（1）2011 年深圳市登革热与基孔肯雅热监测结果分析

【摘要】

为尽早发现登革热与基孔肯雅热病例，了解深圳地区传播媒介白纹伊蚊携带病毒情况。采集应急监测病例及疫情监测病例血液样品，采用荧光 PCR 检测登革病毒与基孔肯雅病毒核酸，核酸检测阴性者，再用 ELISA 法检测 IgM 抗体；用 C6 /36 细胞对早期病例血清进行病毒分离及型别鉴定；捕捉白纹伊蚊检测病毒核酸；调查媒介布雷图指数。结论为通过实验室监测，发现了登革热病例，经流行病学调查系境外感染，及时控制了疫情的传播扩散，为深圳 2011 年世界大学生运动会公共卫生安全提供了保障[20]。

（2）新疆生产建设兵团农四师包虫病流行现状分析

【摘要】

为了解农四师现阶段包虫病的流行现状，为控制包虫病的流行提供依据。根据国家《全国包虫病流行情况调查方案》和《兵团包虫病流行情况调查方案》，调查四师人群患病率、儿童感染率、犬感染率、家畜内脏感染情况及人群包虫病防治知识知晓率，计算机录入资料、建立数据库，在 Epi Infor2007 软件做统计分析。结论为农四师包虫病处于较低的流行水平，主要受经济、地理环境、自然条件、人文环境的影响，需要政府主导，各部门协调配合，才能有效控制包虫病[21]。

（3）miRNA 对秀丽隐杆线虫寿命的影响

【摘要】

miRNA 具有调控基因表达的作用，目前关于 miRNA 的发育和作用机制已经有了相对深入的研究。近些年来 miRNA 对寿命的影响正逐渐被人们所重视，对其作用靶点的进一步研究有利于治疗衰老相关疾病[22]。

（4）应用免疫磁珠分离法纯化弓形虫速殖子的研究

【摘要】

用免疫磁珠分离法分选弓形虫速殖子，以去除宿主细胞成分，并尽可能对虫体的生物学特性无不良影响，为弓形虫的基础与临床研究提供技术基础。采用弓形虫 Wh3 株(China 1 基因型) 速殖子感染小鼠，提取腹腔液，常规方法制备速殖子可溶性抗原，免疫家兔，获得兔抗弓形虫多克隆 IgG 抗体。用抗体包被的免疫磁珠对小鼠腹腔液内弓形虫速殖子进行纯化，比较其纯度、回收率、虫体活力、毒力与感染性。结论为免疫磁珠分离的速殖子纯度、细胞清除率和虫体回收率较高，能有效去除宿主细胞，且对速殖子的活性和毒力无影响。该法操作简便快速，无需昂贵的仪器设备，具有较大的实用价值[23]。

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（如需参考文献中论文全文，请发送论文标题至 yaoyaoyu1987@163.com）

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