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中国预防医学科学院

寄生虫病研究所

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中国预防医学科学院
环境卫生监测所 情报室

中国预防医学科学院

寄生虫病研究所

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前 言

1986 年是“七五”计划的第一年。一年来,全所同志按照本所“七五”科技计划,在全面执行中国预防医学科学院五项任务中作出了新的成绩和贡献,简述如下:

科研工作

全所共有 47 个研究题,其中有关疟疾 17 题,血吸虫病 15 题,丝虫病 3 题,钩虫病 5 题,黑热病 2 题,包虫病 3 题,阿米巴病 1 题,寄生虫分布调查 1 题。其中属应用研究的 39 题(83%),应用基础研究 8 题(17%);新开题 20 个(42.6%)。有关研究报告 81 篇刊于本年报。

47 个研究题中,有卫生部招标项目 2 项 3 题,国家自然科学基金资助项目 1 题,中国预防医学科学院重点课题 7 项 9 题。年内通过投标,有 4 个研究题被列为“七五”国家重点科技项目。

年内通过鉴定的科技成果有“消灭传染源和重点灭螺措施对控制湖沼地区血吸虫病的效果观察”、“丝虫病防治后期低密度微丝蚴血症者传播作用的研究”、“根治疟疾药物筛选动物模型系统的建立及应用”、“应用单克隆抗体鉴定利什曼原虫的斑点-ELISA 试验”、“对间日疟原虫配子体活力周期性的实验研究”、“微小按蚊分型的研究”、“胶乳凝集试验在日本血吸虫病诊断中的应用”及“日本棘隙吸虫病的临床表现和吡喹酮治疗”等 8 项。

“我国抗氯喹恶性疟的地理分布及抗性程度”获卫生部 1986 年重大科技成果乙级奖。

全年发表论文论著 65 篇。

培训和技术指导

第二期一年制的《全国人体寄生虫病学进修班》于 1986 年 7 月结束,25 名学员通过考试,取得结业证书。《全国人体寄生虫分布调查方法标准化讲习班》在四川省举行,来自 15 省(自治区)的 52 名学员参加听课和现场实习。

承办由卫生部和世界卫生组织联合举办的《湖沼地区血吸虫病流行病学与防治讲习班》,学员 17 名,来自湖区 5 省。

外出进修 11 人次。参加各种业余学习的职工 40 人次。委托上海生物制品学校招收代培中专生 8 人。接受来所进修的防治研究技术人员 21 人。派出高年资科技人员前往讲课或作专题报告 28 人次。

招收硕士研究生 4 名。现有在学硕士研究生 8 名。

继续承担卫生部医学科学研究委员会疟疾专题委员会、血吸虫病研究委员会以及全国丝虫病防治科研技术指导组的有关工作。多名中老年专家应邀前往疟疾、血吸虫病、丝虫病或其它寄生虫病流行区进行考察和技术指导活动。

科技外事

继续作为世界卫生组织疟疾、血吸虫病和丝虫病合作中心。获得联合国开发计划署/世界银行/世界卫生组织热带病研究培训专门规划机构加强基金（第5年）2万美元。世界银行第一期贷款项目大部分已执行，购买的仪器设备已经到货，计24.1万美元。

接待来自朝鲜、日本、美国、英国、法国、瑞士、民主德国及欧洲共同体等的外宾29批70人次，来所讲学、考察、短期合作或一般性学术访问。

聘请美国加利福尼亚大学王正中教授和美国伦敦卫生学和热带医学院韦伯教授作为临时技术顾问，先后来所讲学、咨询。

全年派出进修、培训、考察或参加国际会议共13批16人次。

科学情报交流

继续编辑出版《寄生虫学与寄生虫病杂志》、《国外医学寄生虫病分册》、《寄生虫病文献目录》以及本所《年报》。按季向世界卫生组织总部及西太区办事处提供编译的国内专业期刊发表的寄生虫病论著英文摘要211篇。继续开展科技咨询及复制文献声相资料服务。

“寄生虫病文献检索报道刊物”获国家科技情报成果三等奖。

其它

继续开展有关寄生虫抗原制备、病原及媒介生物的保种或饲养、寄生虫标本的收集和制作等工作，以保证本所科研工作的需要及提供给有关单位。

计算机房已建成，VAX-11/730超级小型机待安装调试。

中国预防医学科学院寄生虫病研究所

1987年2月

FOREWORD

1986 is the first year of the Seventh Five-Year Plan. During this year, through the concerted efforts of all the workers in the Institute, new progress and significant achievements have been gained in carrying out Institute's Seventh Five-Year Plan of Science and Technology in accordance with the all-round implementation of the five tasks of the Chinese Academy of Preventive Medicine.

Research work

Of the 47 research projects, 17 were related to malaria, 15 to schistosomiasis, 3 to filariasis, 5 to ancylostomiasis, 2 to kala azar, 3 to echinococcosis, 1 to amoebiasis and 1 to the investigation of parasite distribution. 39(83%) of the total projects were pertaining to applied research and 8(17%) to basic research. 20(42.6%) were new projects. 81 relevant research reports were carried in the present report.

Of the 47 research projects, 3 were from 2 accepted bids called for by the Ministry of Public Health, 1 supported by the National Natural Science Foundation of China, 9 from 7 major research subjects of the Chinese Academy of Preventive Medicine. 4 projects were accepted through tendering as national principal scientific research items of the Seventh Five-Year Plan.

The following 8 research projects passed the appraisal during the year: 1) Continuous study on the schistosomiasis control effect in a lake region in Kingzi County, Jiangxi Province; 2) The role of carriers with low density of microfilariae in the transmission of bancroftian filariasis in the late phase of filariasis control program; 3) Establishment and use of animal model system for screening drugs for radical cure of malaria; 4) Dot-ELISA using monoclonal antibodies for identification of *Leishmania donovani*; 5) Experimental studies on the periodical viability of *Plasmodium vivax* gametocytes; 6) Studies on two types of *Anopheles minimus*; 7) Latex agglutination test in the diagnosis of schistosomiasis and 8) Clinical manifestation of *Echinochasmus japonicus* and its treatment with praziquantel.

The research project "Geographical distribution of chloroquine-resistant *falciparum* malaria and extent of resistance in China" won the second prize of the Important Scientific and Technological Achievements awarded by the Ministry of Public Health in 1986.

All together 68 papers and articles were published in different periodicals.

Personnel training and technical advice

The second session of one-year Advanced Course in Medical Parasitology ended in July, 1986. 25 participants passed the examination and obtained their certificates. A workshop on methodological standardization in a nation-wide human parasite investigation was held in Sichuan Province, 52 participants from 15 provinces or autonomous regions took part in the course and attended the field practice.

A workshop on schistosomiasis epidemiology and its prevention in lake regions co-sponsored by the Ministry of Public Health and WHO was held with 17 participants from these areas.

11 workers were sent to pursue studies in other institutions and 40 workers learned relevant subjects at evening schools. 8 middle-leveled technicians were entrusted to be trained by the Shanghai School of Biological Products. 21 scientific and technic workers from other institutions were accepted to improve their skills in our institute. 28 person-times of senior research workers were invited by other institutions to give lectures or specific reports.

In respect to the training for master's degree, 4 new students were enrolled and now there were altogether 8 trainees in our institute.

The Institute continued to shoulder the secretarial work of National Malaria Commission, National Schistosomiasis Commission and National Technical Steering Group for Filariasis Control and Research under the Medical Science Committee of the Ministry of Public Health. A number of junior or senior specialists took part in the survey and technical instruction activities in malaria, schistosomiasis, filariasis or other parasitic diseases in endemic areas.

International collaboration and scientific exchange

The Institute continued to be a WHO Collaborating Centre for Malaria, Schistosomiasis and Filariasis. A sum of 20 000 US dollars was obtained from UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (the 5th year). All the project supported by the 1st-term loan of the World Bank have been implemented and all the equipments and instruments bought arrived, the sum amounting to 241 000 US dollars.

In 1986, 70 foreign guests in 29 groups coming from the Democratic Korea, Japan, the United States of America, the Great Britain, France, Sweden, the Democratic Republic of Germany and the European Economic Community visited our institute, gave lectures, made investigations, carried out short-term co-operative project or paid general scientific visits.

Professor Wang Ching Chung from the University of California, U. S. A. and Professor Gerald Webbe from London School of Hygiene and Tropical Medicine, U. K. were invited as temporary technical advisers to give lectures and consultations.

16 workers in 13 groups were sent abroad for advanced studies, post-graduate training, short-term investigation or participation in international conference.

Exchange of scientific information

The Journal of Parasitology and Parasitic Diseases, Parasitic Disease Fascicule of Foreign Medicine, the Bibliography of Parasitic Diseases and the Annual Report of the Institute continue to be published. 211 English abstracts of papers carried in the domestic journals were sent to WHO Headquarter in Geneva and the Regional Office of the Western Pacific. Service of scientific consultation and document duplication continued.

Parasitic Disease Document Retrieval and Reporting Series won the 3rd prize of the National Achievements for Scientific and Technological Information.

Other aspects

The Institute continued to carry out preparation of parasite antigens,

maintenance and breeding of pathogens and vectors, collection and preparation of parasite specimens in order to meet the respective needs of research and training in and outside the Institute.

The construction of the computer room has been completed. Ultramicro VAX-11/730 computer is to be set up and adjusted.

Professor Mao Shou-pai was awarded Honorary Member of American Society of Tropical Medicine and Hygiene and elected Corresponding Member of National Academy of Pharmacy (France) for his efforts in promoting studies on anti-parasite drugs.

Institute of Parasitic Diseases
Chinese Academy of Preventive Medicine

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血吸虫病

消灭传染源和重点灭螺措施 对控制湖沼地区血吸虫病的效果观察

控制湖沼地区血吸虫病，是当今我国血防工作的重点和难题。为探讨该类地区的防治策略，我们于1982—1986年，选择江西省鄱阳湖畔的星子县土牛村为试点，采用消灭传染源和重点灭螺措施，观察控制血吸虫病的效果，期望能为湖沼地区血吸虫病提供经济有效的防治策略。

方 法

一、试点区概况

土牛村属江西省星子县苏家垱乡。该村面临鄱阳湖，背依山丘，村旁的土牛嘴为外来船只停靠点。总面积约为599万 m^2 ，其中可耕地213万 m^2 ，草洲高程为13.25—15.38 m（吴淞水位）。每当夏初，水位上涨，一片汪洋；秋末水退，湖洲显露。试点区内有湖汊8个。全村有23个村庄，居民3 012人，选择其中沿湖岸和离湖岸较近的村庄各6个作为试点，人口1 630人。试点区为水旱作物轮种地区，居民感染血吸虫病的方式，主要为打湖草、捕鱼虾、放牧耕牛和洗涤衣物等。

自50年代以来，土牛村开展了血吸虫病防治工作，70年代末，结合围湖造田，于3个湖汊中修筑了堤坝，此后堤内钉螺基本消灭，其余5个未筑堤的湖汊和草洲，虽然每年用化学药物灭螺，部分草洲还进行翻耕，但钉螺分布面积没有明显变化。查病和治疗工作，历年均按常规方法进行。据1979—1981年的查病资料，居民粪检阳性率徘徊在20%左右，且每年都有急性感染发生。1982年春，对试点区居民进行访问调查的结果表明，有血吸虫病治疗史者为36.7%，其中5—9岁组为2.2%，20岁以上各组多在60%以上，部分居民治疗次数多达5—6次，男性有治疗史率为47.2%，显著高于女性的25.7%。

二、控制措施

（一）消灭传染源：

1. 治疗病人：根据综合查病方法确定治疗对象，于每年11—12月用吡喹酮治疗，总

剂量为 40 mg/kg 1 日疗法 (第 1 年部分病人用 60 mg/kg 1~2 日疗法), 5 年来共治疗 991 人次 (包括 531 人次免疫血清学诊断阳性者)。

2. 治疗耕牛: 1982 和 1983 年以锑 273 治疗粪检阳性的耕牛, 1984-1986 年用吡喹酮进行普治, 总剂量为 25 mg/kg 一次喂服, 5 年共治疗 265 头次。

3. 治疗母猪: 1982 和 1983 年, 因对母猪的治疗方法尚不了解, 未进行治疗; 1984 和 1985 年对沿湖村庄有可能接触疫水的母猪, 以吡喹酮进行治疗, 总剂量为 30 mg/kg, 一次喂服, 5 年共治疗 75 头次。

(二) 重点灭螺: 除 1983 年因湖水提早上涨, 未能灭螺外, 其余各年对发现阳性钉螺的地带均用五氯酚钠喷洒, 灭螺面积占有螺面积的 1-2%, 即 0.66-1.32 万 m^2 。

三、流行病学评价方法

(一) 病情调查: 以 3-64 周岁的居民为观察对象, 按一人一卡, 逐年将查病和治疗情况记入卡内。

1. 粪检: 采用尼龙袋集卵孵化法, 每年 3-4 月进行, 每人每年连续粪检 3 次。对粪检阳性者, 随机抽取 50% 以上的病例粪便, 用改良加藤氏法作虫卵计数, 并推算日排卵总量。计算方法为: 人群日排卵总量 = 应检人数 $\times$ 阳性率% $\times$ 每克粪虫卵均数 $\times$ 250 (人日平均排粪量)。

2. 体检: 1982、1984 和 1986 年各进行一次, 以触诊法结合超声诊断仪探查肝脾肿大情况, 以肝在剑突下 ≥ 3 cm 和/或脾在肋缘下能触及者为肿大。

3. 环卵沉淀反应: 检查时间与体检同。按常规方法进行操作, 以环沉率 $\geq 1\%$ 者为阳性, 并计算平均环沉率。若环沉率高者, 结合体检肝脾情况, 按综合查病方案的诊断标准确定治疗对象。

(二) 动物宿主调查: 耕牛和母猪采用尼龙袋集卵孵化法, 鼠类和家犬采用解剖法, 以了解感染变化情况。

(三) 钉螺调查: 于每年春季进行, 堤内村庄周围采用环境抽样法, 草洲按 20×10 m 或 5×5 m 设框调查, 计算有螺框出现率、活螺密度、阳性螺密度和阳性率。

(四) 疫水测定: 在有阳性钉螺地带的水体内, 用小鼠进行感染性测定, 分三天进行, 共计 10 小时, 30 天后解剖, 观察小鼠感染率和虫负荷。

结 果

一、居民患病率 (粪检阳性率) 1982-1986 年应检对象分别为 1460、1451、1445、1496 和 1462 人, 受检率在 95% 左右。实施控制前的 1982 年, 居民患病率为 20.8%, 实施措施后第 4 年降至 1.1%, 下降率为 94.7%。沿湖岸居民的患病率 1982 年为 33.7%, 显著高于堤内居民的 10.3%, 至 1986 年, 前者降至 2.0%, 后者为 0.4%, 分别下降 94.1% 和 96.1%。14 岁以下儿童患病率由 17.5% 降至 0.6%, 其中 9 岁以下儿童由 11.3% 降至零 (表 1.2)。

表1 实施措施前后不同年龄组居民患病率比较

年龄组	实施措施前 (1982)		实施措施后							
			1年(1983)		2年(1984)		3年(1985)		4年(1986)	
	检查 人数	阳性率 (%)	检查 人数	阳性率 (%)	检查 人数	阳性率 (%)	检查 人数	阳性率 (%)	检查 人数	阳性率 (%)
3~	75	5.3	45	0	56	0	30	0	34	0
5~	261	13.0	249	2.4	240	2.4	208	0.5	211	0
10~	224	26.8	238	7.1	252	6.7	259	3.1	252	1.2
15~	209	23.9	202	10.4	205	5.9	174	2.3	184	2.7
20~	234	28.6	238	7.1	250	5.2	270	2.2	289	1.7
30~	166	22.3	175	2.9	173	2.9	188	2.1	189	0.5
40~	115	20.0	102	5.9	109	2.8	116	1.7	123	0.8
50~	107	13.1	116	2.6	117	2.6	110	0.9	121	0
合计	1391	20.8	1365	5.5	1402	3.9	1355	1.9	1403	1.1

表2 实施措施前后沿湖和堤内居民患病率比较

	应检 人数	沿湖居民			堤内居民			合计		
		检查 人数	阳性 人数	阳性率 (%)	检查 人数	阳性 人数	阳性率 (%)	检查 人数	阳性 人数	阳性率 (%)
实施措施前 (1982)	1460	624	210	33.7	767	79	10.3	1391	289	20.8
实施措施后										
1年(1983)	1451	633	61	9.6	732	14	1.9	1365	75	5.5
2年(1984)	1445	659	39	5.9	743	15	2.0	1402	54	3.9
3年(1985)	1496	652	33	5.1	703	3	0.4	1355	26	1.9
4年(1986)	1462	648	13	2.0	755	3	0.4	1403	15	1.1

二、居民感染度(虫卵数/克粪) 1982年观察粪检阳性病人121例,每克粪中虫卵算术均数为 $56.6 \pm 5.14 (\bar{X} \pm SE)$,其后4年分别检查43、41、21和15例,虫卵均数分别为 44.8 ± 6.83 、 11.7 ± 1.83 、 9.4 ± 2.05 和 4.8 ± 1.24 个。推算人群日排卵总数,1982年为429.7万个,其后4年分别为89.3、16.4、6.6和1.8万个,表明人群日排卵量逐年下降,1986年比1982年下降了99.6%(图)。

三、人群血清抗体水平变化 1982、1984和1986年环卵阳性率分别为46.7%、40.4%和24.4%,其中 $\geq 5\%$ 者分别为28.5%、13.0%和6.7%。总的平均环沉率分别为 5.3 ± 0.17 、 1.7 ± 0.05 和 $0.9 \pm 0.03 (\bar{X} \pm SE)$ 。1986年与1982年相比,环卵阳性率下降47.8%,其中 $\geq 5\%$ 阳性率下降76.5%;平均环沉率下降83.0%(表3)。

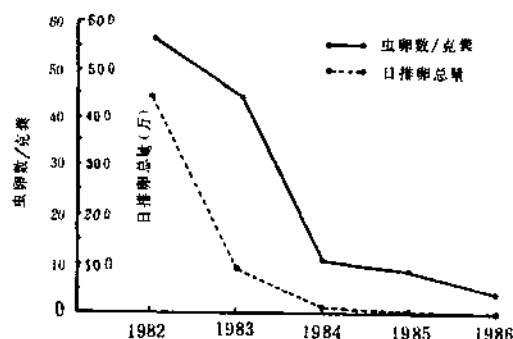


图 居民感染度及日排卵总量变化