

论著

## “引江济淮”工程对钉螺扩散和血吸虫病蔓延的影响

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摘要

目的 论证“引江济淮”工程能否造成钉螺扩散和血吸虫病蔓延。方法 调查工程途经地区血吸虫病流行现状,包括常规方法调查钉螺分布情况,间接血凝试验(IHA)检测居民血清中血吸虫抗体,尼龙绢集卵孵化法检查耕牛血吸虫感染情况;现场螺笼放养,定期观察巢湖实验区钉螺的生存繁殖情况,为期1年,同时设立对照区。结果 工程引水口附近江外滩钉螺密度最高达326只/框。工程途经的无为县、和县钉螺分布广,居民IHA血吸虫抗体阳性率分别为22.1%(168/760)和18.6%(37/199),耕牛血吸虫感染率分别为2.4%(9/371)和0.2%(2/997)。工程沿线巢湖市居巢区和芜湖市裕溪口地区居民血吸虫感染率分别为1.3%(46/3 598)和10.5%(310/2 960)。在巢湖2个实验区放养肋壳钉螺和光壳钉螺各100只,1年后回收活螺分别为6~189只和20~47只,放养期间查见幼螺;2个实验区和对照区肋壳钉螺的产卵季节存活率分别为11.3%(6/53)~16.7%(10/60)、3.0%(1/33)~

20.8%(11/53)和4.7%(2/43)~14.7%(10/68),差异无统计学意义( $\chi^2=0.093$ ,

0.760,  $P>0.05$ ;  $\chi^2=0.647$ , 0,  $P>0.05$ );光壳钉螺分别为24.1%(14/58)~44.4%

(32/72)、37.8%(17/45)~67.3%(37/55)和86.3%(44/51)~93.1%(54/58),差

异有统计学意义( $\chi^2=9.575$ , 5.302,  $P<0.05$ ;  $\chi^2=56.863$ , 36.218,  $P<0.05$ )。产卵季节

(放养1个月)的雌螺卵巢含卵量,2个实验区和对照区肋壳钉螺为 $5.90\pm 1.64$ 个、 $3.00\pm 2.41$ 个和

$4.44\pm 2.65$ 个( $t=1.396$ , 1.460,  $P>0.05$ );光壳钉螺同地卵巢含卵量为 $3.52\pm 3.90$ 个、

$2.92\pm 3.36$ 个和 $3.42\pm 2.40$ 个( $t=0.656$ , 0.201,  $P>0.05$ ),差异均无统计学意义。结论 钉螺可

在巢湖环境中存活、繁殖;“引江济淮”工程可引起钉螺扩散,相关地区开始具备血吸虫病传播条件。

关键词 “引江济淮”工程 长江 淮河 钉螺 扩散 血吸虫病 传播 巢湖

分类号

## Potential Impact of Water Transfer Project from Yangtze to River Huaihe River on Snail Spread and Schistosomiasis Transmission

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Abstract

Objective To investigate the possibility of spread of snails and transmission of schistosomiasis japonica due to the construction of water transfer project from Yangtze River to Huaihe River. Methods In order to understand the current endemic situation of schistosomiasis in the project area, the distribution of snails was surveyed by routine methods, level of anti-schistosome antibody in human sera was detected by indirect haemagglutination test (IHA), and the prevalence of schistosomiasis in cattle was detected by egg hatching method. The snail survival and reproduction were observed in Chaohu Lake area (experimental area) and a control area for one year. Results Snail density was high in two starting points, from where the water in Yangtze River will be directed to Huaihe River. In counties of Wuwei and Hexian, through which the project will be built, the positive rate of anti-schistosome antibody in residents was 22.11% (168/760) and 18.59% (37/199), schistosomiasis prevalence in cattle was 2.42% (9/371) and 0.2% (2/997), respectively. Schistosomiasis was also endemic in Juchao District of Chaohu City. Snails respectively from grassland and hilly area were collected and put in Chaohu Lake for breed and newborn snails were found one year later. During the egg-laying season, the survival rate of snails from grassland in 2 experiment areas and a control area was 11.3%-16.7%, 3.0%-20.8% and 4.7%-14.7% respectively ( $\chi^2=0.093$ , 0.760,  $P>0.05$ ;  $\chi^2=0.647$ , 0,  $P>0.05$ ), and that of snails from hilly area was 24.1%-44.4%, 37.8%-67.3% and 86.3%-93.1% respectively ( $\chi^2$

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=9.575, 5.302,  $P < 0.05$ ;  $\chi^2 = 56.863, 36.218, P < 0.05$ ). There was no significant difference between the experimental area and the control area on the number of eggs in the ovaries of the same type female snails. Conclusion The one-year observation reveals that the construction of the project might result in spread of snails and transmission of schistosomiasis japonica in the relevant areas.

Key words [Water transfer project](#) [Yangtze River](#) [Huaihe River](#) [Oncomelania hupensis](#) [Spread](#) [Schistosomiasis japonica](#) [Transmission](#) [Chaohu lake](#)

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