

- (Eiter HCJ. DNA 疫苗 [M]. 李琦译. 北京: 化学工业出版社, 2005; 196-208.)
- [28] Gidaro GB, Marcucci F, Sensi L, et al. The safety of sublingual-swallow immunotherapy: an analysis of published studies [J]. Clin Exp Allergy, 2005, 35(5): 565-571.
- [29] Wang KM, Wang GL. The clinical observation of treating the children allergic asthma by sublingual drops of *Dermatophagoides farinae* [J]. J Guangdong Med Coll, 2008, 26(3): 310-311. (in Chinese)
(王克明, 王桂兰. 舌下含服粉尘螨滴剂治疗儿童过敏性哮喘的临床观察[J]. 广东医学院学报, 2008, 26(3): 310-311.)
- [30] van Oosterhout AJ, Bloksma N. Regulatory T-lymphocytes in asthma [J]. Eur Respir J, 2005, 26(5): 918-932.
- [31] Wilson MS, Taylor MD, Balic A, et al. Suppression of allergic airway inflammation by helminth-induced regulatory T cells [J]. Exp Med, 2005, 202(9): 1199-1212.
- [32] Maizels RM. Infection and allergy-helminths, hygiene and host immune regulation [J]. Curr Opin Immunol, 2005, 17 (6): 656-661.
- [33] Grindebacke H, Wing K, Andersson AC, et al. Defective suppression of Th2 cytokines by CD4⁺CD25⁺ regulatory T cells in birch allergics during birch pollen season [J]. Clin Exp Allergy, 2004, 34(9): 1364-1372.
- [34] Brown A. In the beginning was the worm: Finding the secrets of life in a tiny hermaphrodite [J]. J Clin Invest, 2004, 113(8): 1074.
- [35] Chinnaiyan AM, Rourke K, Lane BR, et al. Interaction of CED-4 with CED-3 and CED-9: a molecular framework for cell death [J]. Science, 1997, 275(5303): 1122-1126.
- [36] Li SM, Armstrong CM, Bertin N, et al. A map of the interaction network of the metazoan *C. elegans* [J]. Science, 2004, 303(5657): 540-543.
- [37] Goedert M. Neurodegenerative tauopathy in the worm [J]. Proc Natl Acad Sci USA, 2003, 100(17): 9653-9655.
- [38] Kraemer BC, Zhang B, Leverenz JB, et al. Neurodegeneration and defective neurotransmission in a *Caenorhabditis elegans* model of tauopathy [J]. Proc Natl Acad Sci USA, 2003, 100(17): 9980-9985.
- [39] Artal-Sanz M, de Jong L, Tavernarakis N. *Caenorhabditis elegans*: a versatile platform for drug discovery [J]. Biotechnol J, 2006, 1(12): 1405-1418.

(收稿日期: 2008-10-30 编辑: 杨频)

文章编号: 1000-7423(2009)-03-0279-02

【研究简报】

宠物仓鼠胃肠道寄生虫感染情况调查

吕超超, 冯超, 齐萌, 杨红玉, 菅复春, 宁长申, 张龙现*

【摘要】 用饱和蔗糖溶液漂浮法、改良抗酸染色法和卢戈碘液染色法对郑州某宠物市场金色仓鼠 (*Mesocricetus auratus*)、黑线毛足鼠 (*Phodopus sungorus*)、坎氏毛足鼠 (*P. campbelli*) 和小毛足鼠 (*P. roborovskii*) 共 153 份粪便样品进行检查, 寄生虫感染阳性率分别为 70.7% (41/58)、96.7% (59/61)、83.9% (26/31) 和 100% (3/3), 平均阳性率为 84.3%。共检出 8 种寄生虫, 分别为隐孢子虫 (15.0%)、贾第虫 (22.2%)、球虫 (2.0%)、短膜壳绦虫 (31.4%)、长膜壳绦虫 (25.5%)、管状线虫 (41.8%)、四翼无刺线虫 (7.2%) 和毛尾目未定种类 (18.3%)。表明宠物仓鼠可感染和传播多种人兽共同感染的寄生虫。

【关键词】 宠物; 仓鼠; 胃肠道寄生虫; 调查

中图分类号: R53 文献标识码: A

Investigation on the Prevalence of Gastrointestinal Parasites in Pet Hamsters

LV Chao-chao, FENG Chao, QI Meng, YANG Hong-yu, JIAN Fu-chun, NING Chang-shen, ZHANG Long-xian*

(College of Animal Science and Veterinary Medicine, Henan Agriculture University, Zhengzhou 450002, China)

【Abstract】 One hundred and fifty-three fecal samples of pet hamsters (*Mesocricetus auratus*, *Phodopus sungorus*, *P. campbelli* and *P. roborovskii*) were collected from a pet-market in Zhengzhou, and examined by Sheather's sugar flotation, modified acid-fast staining and Lugol's iodine-solution staining. The prevalence of parasites was 70.7% (41/58), 96.7% (59/61), 83.9% (26/31), and 100% (3/3) respectively, with an overall prevalence of 84.3%. Eggs, cysts or oocysts of *Cryptosporidium* sp. (15.0%), *Giardia* sp. (22.2%), coccidian (2.0%), *Hymenolepis nana* (31.4%), *Hymenolepis diminuta* (25.5%), *Syphacia* spp. (41.8%), *Aspiculuris tetraptera* (7.2%) and undetermined *Trichurata* nematode (18.3%) were found from the samples. The results suggest that pet hamsters may be infected and transmit several zoonotic parasites.

基金项目: 国家科技部自然资源平台项目 (No. 2005DKA21100)

作者单位: 河南农业大学牧医工程学院, 郑州 450002 * 通讯作者, E-mail: zhanglx8999@yahoo.com.cn

【Key words】 Pet; Hamster; Gastrointestinal parasite; Investigation

Supported by the National Resource Platform Project of the Ministry of Science and Technology (No. 2005DKA21100)

* Corresponding author, E-mail: zhanglx8999@yahoo.com.cn

仓鼠是啮齿目仓鼠亚科动物的总称, 绝大多数种类仓鼠两颊有颊囊, 用以临时储存或搬运食物。其中, 金色中仓鼠 (*Mesocricetus auratus*) 和灰仓鼠 (*Cricetulus griseus*) 是常用的实验动物, 也有一些仓鼠因体型小、长相可爱, 易与人亲近, 成为人们喜爱的宠物。宠物仓鼠主要有金色仓鼠、黑线毛足鼠 (*Phodopus sungorus*)、坎氏毛足鼠 (*P. campbelli*) 和小毛足鼠 (*P. roborovskii*) 等。

仓鼠可感染携带多种人兽共患病原体^[1,2], 国外研究者对实验仓鼠和宠物仓鼠肠道寄生虫感染情况曾做过调查^[2-5], 我国金黛英等^[6]报道实验金色仓鼠胃肠道蠕虫感染情况。结果均表明, 贾第虫、膜壳绦虫和管状线虫等感染较常见。宠物仓鼠与人类关系密切, 并且是某些重要人兽共患寄生虫病的保虫宿主和传染源, 故对郑州某宠物市场宠物仓鼠胃肠道寄生虫的感染情况进行调查, 报道如下。

1 材料与方 法

1.1 样品来源 宠物店用玻璃容器分别饲养的同种、同龄仓鼠数只至数十只, 分别收集各容器内新鲜粪便样品 (记为 1 份), 装入清洁样品袋, 记录详细信息, 4℃保存待检。

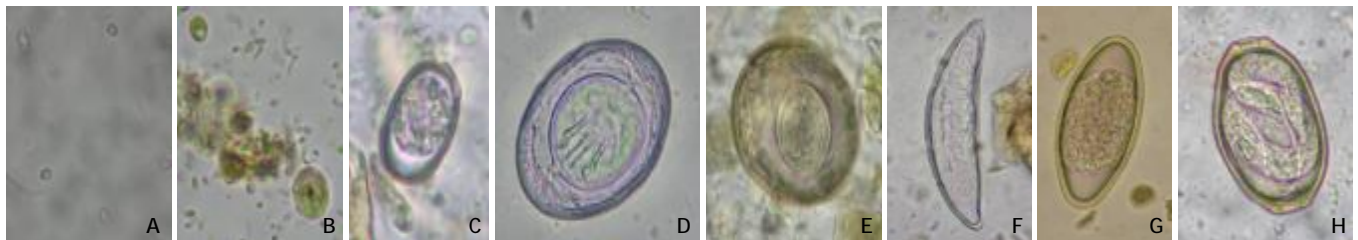
1.2 寄生虫检查 参照文献[7]采用卢戈碘液染色法检查贾第虫包囊和结肠小袋纤毛虫包囊, 用改良抗酸染色法检查隐孢子虫卵囊和环孢子虫卵囊, 用饱和蔗糖溶液漂浮法检查胃肠道寄生虫卵囊或虫卵。

1.3 虫种鉴定 依据虫卵或卵囊大小、形状、颜色、卵壳及内容物的典型特征对虫卵或卵囊进行鉴定。

2 结果

2.1 寄生虫感染情况 共收集 4 种宠物仓鼠 153 份粪样, 寄生虫感染平均阳性率为 84.3% (129/153), 蠕虫阳性率为 71.9% (110/153)。其中金色仓鼠、黑线毛足鼠、坎氏毛足鼠和小毛足鼠阳性率分别为 70.7% (41/58)、96.7% (59/61)、83.9% (26/31) 和 100% (3/3)。

2.2 感染寄生虫种类 共检出 8 种寄生虫感染, 分别为隐孢子虫、贾第虫、球虫、短膜壳绦虫、长膜壳绦虫、管状线虫、四翼无刺线虫和 1 个毛尾目未定种类 (图 1)。其中, 管状线虫阳性率最高, 为 41.8% (64/153), 随后依次为短膜壳绦虫 31.4% (48/153)、长膜壳绦虫 25.5% (39/153)、贾第虫 22.2% (34/153)、隐孢子虫 15.0% (23/153)。



A: 饱和蔗糖溶液漂浮的隐孢子虫卵囊, B: 贾第虫包囊, C: 球虫未孢子化卵囊, D: 短膜壳绦虫卵, E: 长膜壳绦虫卵, F: 管状线虫卵, G: 四翼无刺线虫卵, H: 毛尾目未定种线虫卵。

图 1 宠物仓鼠感染的寄生虫卵囊和虫卵 (×400)

3 讨论

本调查宠物仓鼠寄生虫感染平均阳性率为 84.3%, 蠕虫阳性率为 71.9%。宠物和实验仓鼠感染的宠物和实验仓鼠感染的蠕虫主要为管状线虫和短膜壳绦虫^[3-6]。感染仓鼠的管状线虫至少有 5 种, 多为混合感染。其中隐藏管状线虫为人兽共同感染虫种^[8]。本调查管状线虫、短膜壳绦虫和长膜壳绦虫为宠物仓鼠感染率最高的 3 种蠕虫。

宠物仓鼠可感染多种人兽共同感染的寄生虫, 对人类健康构成威胁。本次调查检出 6 种人兽共同感染的寄生虫, 分别为隐孢子虫、贾第虫、短膜壳绦虫、长膜壳绦虫、管状线虫和四翼无刺线虫。随着人们饲养宠物的种类和数量日趋增多, 人与宠物接触更加频繁, 这就增加了人兽共患病传播的机会, 应引起重视。

参 考 文 献

[1] Griffiths HJ. Some common parasites of small laboratory animals [J]. Lab Anim, 1971, 5(1): 123-135.
[2] Wantland WW. Parasitic fauna of the golden hamster[J]. J Dent Res, 1955, 34(5): 631-649.
[3] Stone WB, Maxwell RD. Potential helminth infections in humans

from pet or laboratory mice and hamsters [J]. Pub Hlth Rep, 1966, 81(7): 647-653.
[4] Pinto RM, Gonçalves L, Gomes DC, et al. Helminth fauna of the golden hamster *Mesocricetus auratus* in Brazil [J]. Contemp Top Lab Anim Sci, 2001, 40(2): 21-26.
[5] Hasegawa H, Sato H, Iwakiri E, et al. Helminths collected from imported pet murids, with special reference to concomitant infection of the golden hamsters with three pinworm species of the genus *Syphacia* (Nematoda: oxyuridae) [J]. J Parasitol, 2008, 94(3): 752-754.
[6] Jin DY, Chang ZS, Ren YF, et al. Survey of gastrointestinal helminthes in *Mesocricetus auratus*[J]. Shanghai Lab Anim Sci, 1991, 11(2): 116-117. (in Chinese)
(金黛英, 常正山, 任燕芬, 等. 金黄仓鼠胃肠道寄生蠕虫调查 [J]. 上海实验动物科学, 1991, 11(2): 116-117.)
[7] Wu GL. Human Parasitology [M]. 3th ed. Beijing: People's Medical Publishing House, 2004. (in Chinese)
(吴观陵. 人体寄生虫学[M]. 第 3 版. 北京: 人民卫生出版社, 2004.)
[8] PLA University of Veterinary. Zoonoses [M]. Beijing: Lantian Publishing House, 1993. (in Chinese)
(中国人民解放军兽医大学编. 人兽共患病学[M]. 北京: 蓝天出版社, 1993.)

(收稿日期: 2008-10-21 编辑: 衣凤芸)