Toxocarasis: The Neglected Parasitic Zoonosis

Cassie Wigfall  
*Boise State University*

Jared Romero  
*Boise State University*

This research is part of the One Health Creating Solutions project.
Toxocariasis: The Neglected Parasitic Zoonosis

Abstract
Toxocariasis is an infection by a roundworm parasite that lives in the intestines of cats, dogs, and foxes. Their eggs are shed in animal feces contaminating the ground around them. Infectious eggs can be ingested, hatch, and release larvae that penetrate the intestines and travel to the brain, liver, heart, lungs, muscle, and/or eye. Toxocariasis has been identified by the Centers for Disease Control as one of five neglected parasitic infections (NPI) as surveillance, prevention, and/or treatment are given little attention. About 85% of clinical physicians claim passing knowledge of Toxocariasis, however, when given a list of symptoms only half diagnosed correctly. This particular zoonosis affects poor or minority populations more. Playgrounds and schoolyards can elevate exposure risks for young children. Little testing is done by physicians, yet around 5% (16 million) of Americans test positive for the Toxocara antibody. This indicates exposure to the parasite eggs at some point in their lives. Currently, there are no grants from the National Institutes of Health (NIH) for the research of Toxocariasis. Larvae that travel to the brain may contribute to reduced learning ability and mental illness. In domestic pets, about 30% of dogs and 25% of cats carry Toxocara. The rate is higher in pets allowed outside and strays. Increase awareness of Toxocariasis with parents and pet owners. Promote vaccination and deworming treatments that are given out by veterinarians. Educate clinical physicians on the diagnosis and treatment of Toxocariasis in children. With the proper education of pet waste disposal and pet health options, Toxocariasis is a completely preventable parasitic infection. If exposed, there are current treatment options available that would prevent any long-term health effects. While it is known that larvae travel systemically in humans, little is known about the health implications. This wide-spread, common parasite needs more attention to prevent potential detrimental health implications.

Keywords
environmental sciences, One Health Creating Solutions, social and behavioral sciences

Comments
This research is part of the One Health Creating Solutions project.

This student presentation is available at ScholarWorks: https://scholarworks.boisestate.edu/vip_2020/7
VIP One Health Solutions

Cassie Wigfall and Jared Romero, Ph.D.

Toxocariasis: The Neglected Parasitic Zoonosis

“Toxocara” image from CDC.gov

TOXOCARIASIS

- An infection by a roundworm parasite that lives in the intestines of cats, dogs, and fox.
- Eggs are shed in animal feces, contaminating the ground around them.
- Infected eggs can be ingested, hatch, and release larvae that penetrate the intestines and travel to the brain, liver, heart, lungs, muscle, and/or eye.

PROBLEM

- Identified by the Centers for Disease Control as one of five neglected parasitic infections (NPI) as surveillance, prevention, and/or treatment are given little attention.
- About 85% of clinical physicians claim passing knowledge of Toxocariasis, however, when given a list of symptoms only half diagnosed correctly.
- Poor or minority populations are at a higher risk for exposure.
- Playgrounds and schoolyards can elevate exposure risks for young children.

PUBLIC HEALTH IMPACT

- Little testing is done by physicians, yet around 5% (16 million) of Americans have been infected with the parasite.
- No current grants from the National Institutes of Health (NIH) for the research of Toxocariasis.
- Larvae that travel to the brain may contribute to reduced learning ability and mental illness.
- In domestic pets, about 30% of dogs and 25% of cats carry Toxocara. The rate is higher in pets allowed outside and strays.

GOALS

- Increase awareness of Toxocariasis with parents and pet owners.
- Promote vaccination and deworming treatments that are given out by veterinarians.
- Educate clinical physicians on the diagnosis and treatment of Toxocariasis in children.

CONCLUSION

With the proper education of pet waste disposal and pet health options, Toxocariasis is a completely preventable parasitic infection. If exposed, there are current treatment options available that would prevent any long-term health effects. While it is known that larvae travel systemically in humans, little is known about the health implications. This widespread common parasite needs more attention to prevent potential detrimental health implications.

LITERATURE CITED


INTRODUCTION
Opionsul virmis? Mulii sica te deris Maelus, sua ocuperv iveris menihilicit, quisus sedii conique porunum in averum Voc mendam num oranicaudet ficavesTi. Henarbit; nitui int? Qui prarit pos condam audet potam cerfici popotiam hor am.

ANALYSIS / DATA
Analysis of the context.
- Opionsul virmis? Mulii sica te deris
- Maelus, sua ocuperv iveris menihilicit, quisus sedii

Analysis of the context.
- Conique porunum in averum us sidem ime publint iena.
- Voc mendam num oranicaudet fcondam

SECTION HEADER
Opionsul virmis? Mulii sica te deris Maelus, sua ocuperv iveris menihilicit, quisus sedii conique porunum in averum us sidem ime publint lenatquem defece adhucite. Pudam quam re nonsediae siti, ipa nempore sitatumqu volupta et adi si repella.

CONCLUSION
Opionsul virmis? Mulii sica te deris Maelus, sua ocuperv iveris menihilicit, quisus sedii conique porunum in averum us sidem ime publint lenatquem defece adhucite.

Maelus: sua occuperv iveris menihilicit.