

Reinier Haga

Medisch Diagnostisch Centrum



“Komt een huisdier bij de dokter”

WAMM Parasitologie 21 september, 2021

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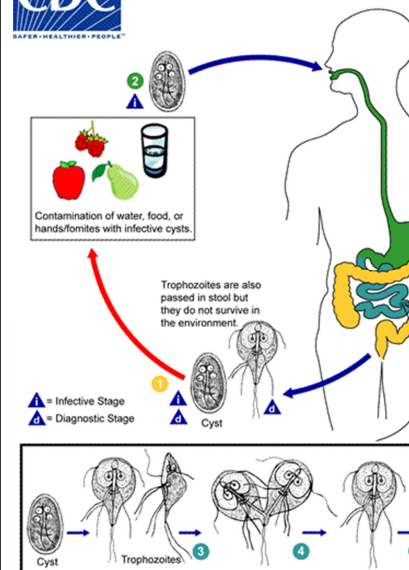
arts microbioloog RHMDC Delft

Introductie

- ▶ Opvallend vaak baasjes van dieren verwezen door dierenarts naar huisarts met infectievragen
 - ▶ Oa MRSA, Leptospirose, Parasieten en nog meer.
 - ▶ 2 casus

Casus 1: Hond met diarree

- ▶ Hond heeft sinds enkele dagen diarree
- ▶ Hond getest via dierenarts: Giardia lamblia
- ▶ Wat nu?
- ▶ Baasje heeft ziekte van Crohn en altijd wel darmklachten
- ▶ → Wat nu?



Giardia lamblia

- ▶ Cysten zijn verantwoordelijk voor transmissie dmv orale inname uit gecontamineerd voedsel of feco-orale route
- ▶ Cysten kunnen langdurig overleven in omgeving: enkele maanden in koud water
- ▶ In dunne darm vormt 1 cyste → 2 trophozoïten
- ▶ Zowel dieren als mensen kunnen geïnfecteerd raken met Giardia: “their importance as a reservoir is unclear”

Giardia lamblia (mens)

- ▶ Klachten kunnen variëren van asymptomatisch dragerschap tot langerdurende klachten van diarree, gepaard gaande met veel gasvorming, misselijkheid, buikkrampen en vette stinkende ontlasting. Zie de [LCI-richtlijn Giardiasis](#).
- ▶ Incubatieduur meestal 1 week, tot 2 weken.
- ▶ 3-10 % van diarreeklachten in HA praktijk (leeftijd)
- ▶ Therapie Metronidazol po 2000mg 1 dd 3 dagen

de Wit MA, Koopmans MP, Kortbeek LM, van Leeuwen NJ, Vinjé J, van Duynhoven YT. Etiology of gastroenteritis in sentinel general practices in the netherlands. Clin Infect Dis. 2001 Aug 1;33(3):280-8. doi: 10.1086/321875. Epub 2001 Jul 5. PMID: 11438890.

Giardia lamblia (hond)

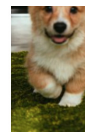
- ▶ 

Zoönose?



Can I get *Giardia* infection from my pet?

The chances of people getting *Giardia* infection from dogs or cats are low. The type of *Giardia* that infects humans is not usually the same type that infects dogs and cats.



If you own other household or exotic pets, contact your veterinarian for more information. Some strains of *Giardia* can be shared between humans and animals, including chinchillas, beavers, birds, opossums, and monkeys.

Genotypen

- ▶ A-G
 - A. subtypes A-I tot A-IV:
 - ▶ A-I mens en dier
 - ▶ A-II mens
 - ▶ A-III dier
 - ▶ A-IV dier
 - B. B brede gastheerspecificiteit: mensen en dieren
 - C. C dier, hond
 - D. D dier, hond
 - E. E dier, hoefdieren
 - F. F dier, kat
 - G. G dier, rat

Genotyping of *Giardia duodenalis* from human and animal samples from Brazil using β -giardin gene: A phylogenetic analysis

→ 1 hond-mens paar genotype A1

A.C. Volotão ^{a,b}, L.M. Costa-Macedo ^c, F.S.M. Haddad ^c, A. Brandão ^a, J.M. Peralta ^b, O. Fernandes ^a, R. ^a

→ Incidenteel humane genotypes aangetroffen bij dieren.

Trends in Parasitology

REVIEW SPECIAL ISSUE: ZOONOSIS OF PEOPLE AND PETS IN THE USA | VOLUME 26, ISSUE 4, P180-189, APRIL 01, 2010

Giardiasis in dogs and cats: update on epidemiology and public health significance

Lora R. Ballweber • Lihua Xiao • Dwight D. Bowman • Geoffrey Kahn • Vitaliano A. Cama

Published: March 03, 2010 • DOI: <https://doi.org/10.1016/j.pt.2010.02.005>

Advies

- ▶ Interactie:
 - ▶ Wat zou u doen?
 - ▶ Preventief behandelen
 - ▶ Diagnostiek
 - ▶ Uitleg en op geleide van klachten diagnostiek en evt therapie
 - ▶ Anders?
- ▶ Klachten vervolgen: 1 week, soms 2 weken incubatieduur
- ▶ Indien toename inleveren feces voor PCR diagnostiek: TAT 1 dag
- ▶ Geen preventieve behandeling noodzakelijk

Take home message:

- ▶ Giardia meerdere genotypes
 - ▶ Soort specifiek
 - ▶ Zeldzame gevallen van dier-mens transmissie bekend



Kat met *Tritrichomonas*



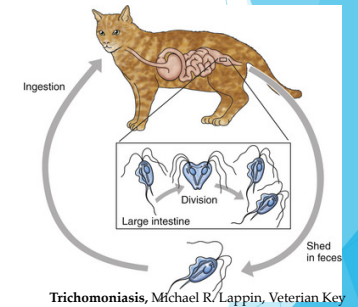
Casus 2: Kat

- ▶ Baasje met kat, infectie met *Tritrichomonas*
- ▶ Verzoek vanuit huisarts om diagnostiek naar *Tritrichomonas*
- ▶ Kat heeft diarree: dierenarts *Tritrichomonas*
- ▶ →bij doorvragen baasje 2 maanden diarree, verder gezond



Tijdschrift voor Diergeneeskunde | nr 3 | maart 2017

- ▶ Veroorzaker van diarreeklachten
- ▶ Overdracht via feco orale route, geen cystevorming
- ▶ Raskatten vaker aangedaan, vooral bij veel dieren op elkaar
- ▶ Behandeling met ronidazol (NB andere middelen oa metronidazol niet effectief*)



*Leelanupat A, Kamyinkird K, Chimnoi W, Nimsuphan B. Prevalence of *Tritrichomonas foetus* infection in cats in Bangkok metropolitan area and in vitro drug sensitivity testing. Vet Parasitol Reg Stud Reports. 2020 Jul;21:100440. doi: 10.1016/j.vprsr.2020.100440. Epub 2020 Jul 23. PMID: 32862898.

Zoönose?

- ▶ 4 gevallen in literatuur
 - ▶ Pt met agammaglobulinemie en cholecystitis (onbekend)
 - ▶ Pt met AIDS en PCpneumonie (cotrim, overleefd)
 - ▶ Pt na allogene SCT en meningoencephalitis (AB †)
 - ▶ Pt met common variable immunodeficiëntie en peritonitis (metronidazol †)
- ▶ Characterization of a human isolate of *Tritrichomonas foetus* (cattle/swine genotype) infected by a zoonotic opportunistic infection Suzuki J, Kobayashi S, Osuka H, Kawahata D, Oishi T, Sekiguchi K, Hamada A, Iwata S. J Vet Med Sci. 2016 May 3;78(4):633-40. doi: 10.1292/jvms.15-0644. Epub 2015 Dec 21. PMID: 26685985; PMCID: PMC4873855.
- ▶ Molecular identification of *Tritrichomonas foetus*-like organisms as confounding agents of human *Pneumocystis pneumonia* Dubouché C, Caby S, Dufernez F, Chabé M, Gantois N, Delgado-Viscogliosi P, Billy C, Barré E, Torabi E, Capron M, Pierce RJ, Dei-Cas E, Viscogliosi E. J Clin Microbiol. 2006 Mar; 44(3):1165-8.
- ▶ *Trichomonas foetus* meningoencephalitis after allogeneic peripheral blood stem cell transplantation Okamoto S, Wakui M, Kobayashi H, Sato N, Ishida A, Tanabe M, Takeuchi T, Fukushima S, Yamada T, Ikeda Y, Bone Marrow Transplant. 1998 Jan; 21(1):89-91.
- ▶ Rare case of trichomonal peritonitis Zalonis CA, Pillay A, Secor W, Humburg B, Aber R. [letter]. Emerg Infect Dis. 2011 Jul [date cited]. <http://dx.doi.org/10.3201/eid1707.100892>

Advies:

- ▶ Geen zoönose
- ▶ Geen diagnostiek naar *Tritrichomonas*
- ▶ Diarree oorzaken nagaan evt diagnostiek humane verwekkers



Vragen/Discussie

- igh levels of genetic diversity, showing seven genotypes: A, B, C, D, E, F, and G. Only Assemblages A and B have been detected in humans and in a wide range of other mammalian hosts, whereas the remaining Assemblages (C-G) are host-specific.
- The cysts were collected in the city of Rio de Janeiro, in Brazil, from a population composed by humans (n=366, 310 children and 56 adults), domestic animals (n=11) from a municipal daycare center in the surroundings of a slum and neighborhood medium-high class domestic animals (n=18). Parasitological exams were developed in human fecal samples. Parasites were found in 60% (186/310) and 66% (37/56) of the samples from children and adults, respectively. Among children's samples, 27.7% (86/310) were positive for *G. duodenalis*. Only 1.7% (1/56) of the adults was positive for this parasite. In general a total of 87 fecal samples (86 from children and 1 from adult) from all population studied were positive for *G. duodenalis*, and 62 of these were subjected to molecular analysis using a PCR that amplified a fragment of the beta-giardin gene. Sixty samples were typed as genotype A1, two as genotype A2 and genotype B was not encountered. Among domestic animals samples (n=26), eight (seven dogs and one cat) from the slum community were identified as genotype A1 and all control samples (n=18) were negative in the molecular assay. The host-specific genotypes C, G and F were not found. In this study we described single case of *G. duodenalis* infection associated with a child and her dog and both isolates characterized as genotype A1. Despite the low incidence, this data suggest the putative existence of a zoonotic cycle of *G. duodenalis* in the studied population.
- Volzato AC, Costa-Macedo LM, Haddad FS, Brandão A, Peralta JM, Fernandes O. Genotyping of *Giardia duodenalis* from human and animal samples from Brazil using beta-giardin gene: a phylogenetic analysis. *Acta Trop*. 2007 Apr;102(1):19-8. doi: 10.1016/j.actatropica.2007.02.010. Epub 2007 Feb 26. PMID: 17426452.
- Molecular data have defined seven genetic Assemblages of *Giardia duodenalis*, named A-G. Humans are infected with Assemblages A and B, dogs primarily with C and D, and cats with F. Assemblage A has been subclassified into subtypes A-I to A-IV. A-I has been reported in humans and animals, A-II in humans, and A-III and IV exclusively in animals. Assemblage B has broad host specificity infecting humans and animals. Recently, small numbers of dogs and cats have been reported to also carry Assemblages A-I or B. Because these genotypes are found primarily in humans, and no comprehensive studies to address zoonotic transmission of *G. duodenalis* are yet available, the potential role of dogs and cats cannot be conclusively excluded.
- Ballweber LR, Xiao L, Bowman DD, Kahn G, Cama VA. Giardiasis in dogs and cats: update on epidemiology and public health significance. *Trends Parasitol*. 2010 Apr;26(4):180-9. doi: 10.1016/j.pt.2010.02.005. Epub 2010 Mar 2. PMID: 20202906.