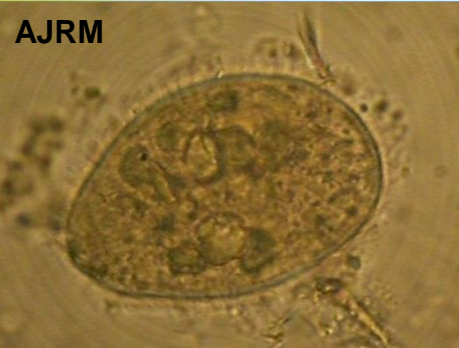




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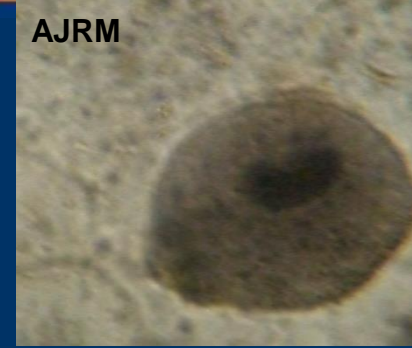


AJRM



# Neobalantidiasis (Balantidiasis)

AJRM



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Editor, **Journal of Infection in Developing Countries (JIDC)**.

Coordinador, Comisión de **Publicaciones Científicas y Docencia**, Sociedad Latinoamericana de Medicina del Viajero (SLAMVI).  
Editorial Board, **Travel Medicine & Infectious Diseases (TMAID)**.

Editor Asociado, revista de la Asociación Colombiana de Infectología, **Infectio (ACIN)**.

Co-Chair, Working Group on **Zoonoses**, International Society of Chemotherapy (WGZ-ISC).

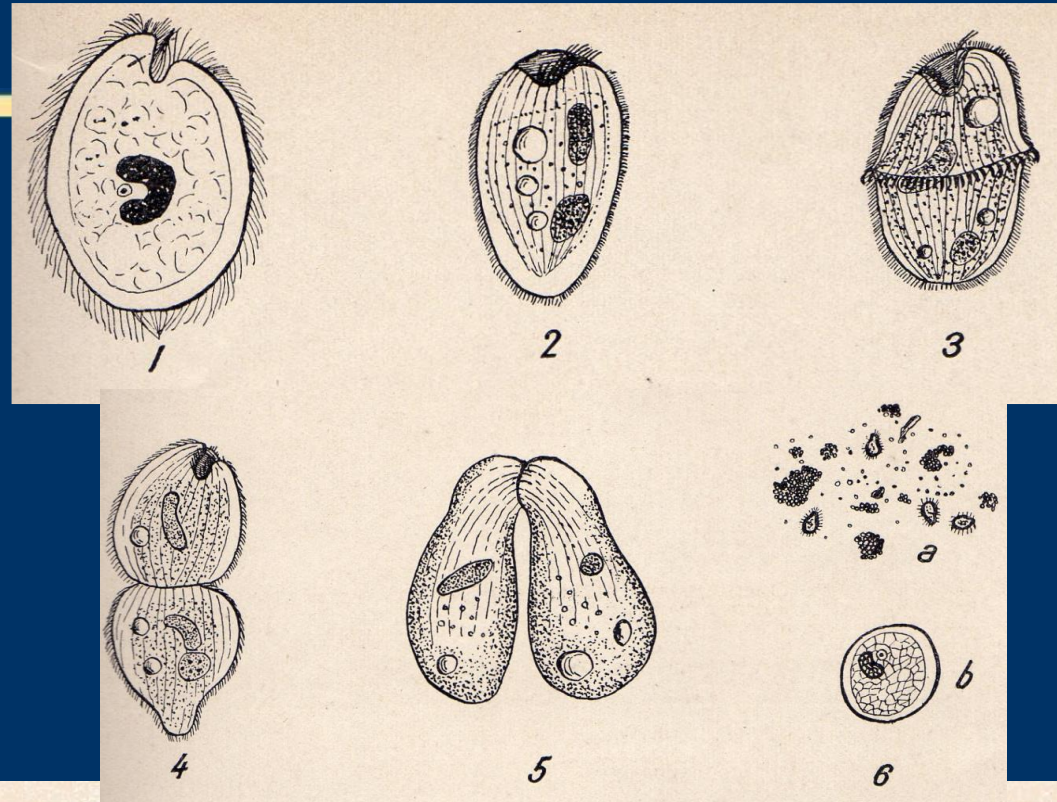
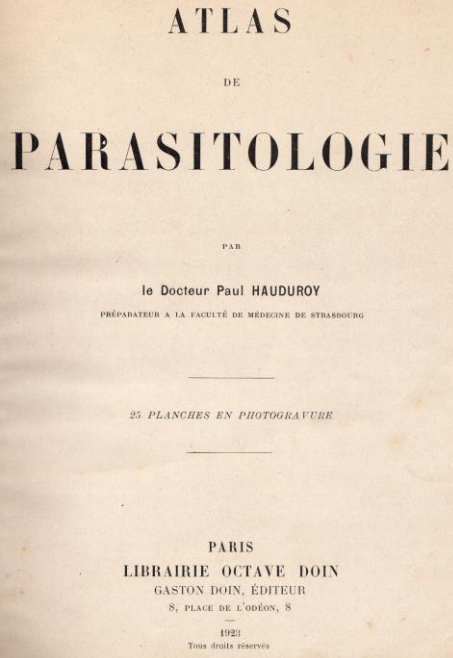
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# Neobalantidiasis

## Historia



*Fig. 1.* *Balantidium coli*. Infusoire parasite pathogène de l'homme, assez rare. Il détermine une dysenterie dont les symptômes sont ceux de la dysenterie amibienne. Le diagnostic ne peut se faire que par l'examen des selles et la recherche des parasites.

*Fig. 2 à Fig. 5.* Reproduction de *Balantidium coli* (d'après Leuckart).

*Fig. 2.* *Balantidium coli* avant la division. A droite et en haut se trouve le noyau principal.

*Fig. 3 - 4.* *Balantidium coli*. Stade de division et division.

*Fig. 5.* *Balantidium coli*. Stade de conjugaison.

*Fig. 6 a.* Selles d'un malade atteint de dysenterie balantidienne. On voit les parasites. *b)* *Balantidium coli*. Kyste.





# Neobalantidiasis

## Historia y Epidemiología

- Balantidiasis se identificó por primera vez en 1857, en dos humanos con disentería (Malmsten, P. H. 1857. Infusorien als Intestinal-Thiere beim Menschen. Arch. Pathol. Anat. Physiol. Klin. Med. 12:302–309).
- Hasta 1988 se habían reportado menos de 1000 casos
- Se supone es de distribución mundial, pero es más común en zonas pobres, con pobres hábitos higiénicos, problemas sanitarios y especialmente proximidad con cerdos.
- Regiones de alta prevalencia incluyen Nueva Guinea, Filipinas, América Latina y algunas partes de Oriente Medio.
- Prevalencia mundial se estima en 0,02% a 0,12%.
- En ocasiones se reportan brotes epidémicos

# Neobalantidiasis

## Taxonomía

- Eukaryota (super reino);
- Alveolata;

- Ciliophora;

Intramacronucleata (sph);

Litostomatea (c);

Trichostomatia (sc);

Vestibuliferida (o);

Balantidiidae (f);

*Neobalantidium coli*

*Syn Balantidium coli*

*Syn Paramecium coli*

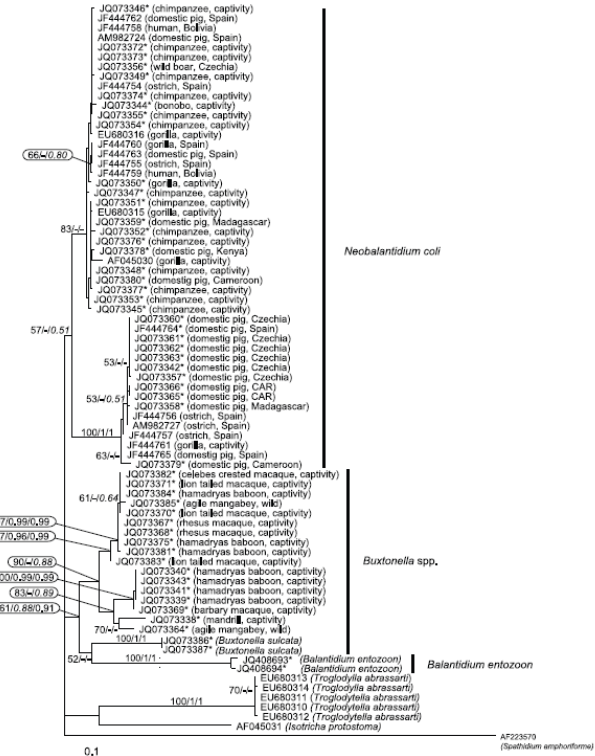
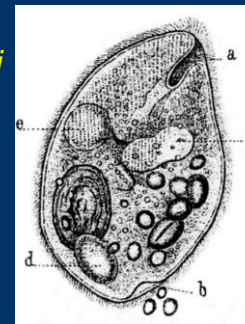


Figure 2. Maximum likelihood phylogenetic tree as inferred from the ITS1-5.8S-ITS2 DNA region. The tree was computed using PhyML with the GTR model for nucleotide substitutions. Numbers above branches indicate ML bootstrap support from 1000 replicates. PhyloBayes posterior probabilities computed with CAT model/PhyloBayes posterior probabilities computed with GTR model. New sequences are marked with a star.



Taxonomy  
Browser

Pomajbí'kova´ K, Oborní'k M, Hora'k A, Petrž'elkova´ KJ, Grim JN, et al. (2013) Novel Insights into the Genetic Diversity of *Balantidium* and *Balantidium*-like Cyst-forming Ciliates. PLoS Negl Trop Dis 7(3): e2140.

# Hospedadores de *Neobalantidium coli*

**Table 1.** The summary of isolates from captive African great apes.

Site (State)	Host species	Origin	S. No.	A. No. 18S	A. No. ITS
Antwerp Zoo (Belgium)	chimpanzees ( <i>Pan troglodytes</i> )	captivity	1	JQ073313	JQ073351
Dierenpark Amersfoort (Netherlands)	chimpanzees ( <i>Pan troglodytes</i> )	captivity	1	JQ073311	JQ073349
La Vallée des Signes (France)	chimpanzees ( <i>Pan troglodytes</i> )	captivity	1	JQ073309	JQ073347
Limbe Wildlife Centre (Cameroon)	chimpanzees ( <i>Pan troglodytes</i> )	captivity	3	JQ073315-17	JQ073353-55
Ogród Zoologiczny w Opolu (Poland)	gorilla ( <i>Gorilla gorilla</i> )	captivity	1	JQ073312	JQ073350
Sweetwaters Chimpanzee Sanctuary (Kenya)	chimpanzees ( <i>Pan troglodytes</i> )	captivity	3	JQ073314, -31-32	JQ073352, -76-77
Chimps' Sanctuary, PN de Conkouati Douli (Republic of Congo)	chimpanzees ( <i>Pan troglodytes</i> )	captivity	3	JQ073329	JQ073372-74
Twycross Zoo (GB)	chimpanzees ( <i>Pan troglodytes</i> )	captivity	2	JQ073310	JQ073348, -18
Zoo Aquarium Madrid (Spain)	chimpanzees ( <i>Pan troglodytes</i> )	captivity	2	JQ073307-08	JQ073345-46
Zoologischer Garten Leipzig (Germany)	bonobo ( <i>Pan paniscus</i> )	captivity	1	JQ073306	JQ073344

# Hospedadores de *Neobalantidium coli*

**Table 2.** The summary of isolates from captive and wild-ranging other primates.

Site (State)	Host species	Origin	S. No.	A. No. SSU	A. No. ITS
Amsterdam Zoo (NI)	mandrill ( <i>Mandrillus sphinx</i> )	captivity	1	-	JQ073338
	celebes crested macaque ( <i>Macaca nigra</i> )	captivity	1	-	JQ073382
AAP Sanctuary For Exotic Animals (NI)	hamadryas baboon ( <i>Papio hamadryas</i> )	captivity	6	JQ073333	JQ073339-41,-75,-81,-84
	barbary macaque ( <i>Macaca sylvanus</i> )	captivity	1	-	JQ073369
Safari Park Beekse Bergen (NI)	rhesus macaque ( <i>Macaca mulatta</i> )	captivity	2	JQ073327-28	JQ073367-68
Apenheul Primate Park (NI)	lion-tailed macaque ( <i>Macaca silenus</i> )	captivity	3	-	JQ073370-71,-83
Sweetwaters Chimpanzee Sanctuary (K)	hamadryas baboon ( <i>Papio hamadryas</i> )	captivity	1	JQ073305	JQ73343
Dzanga-Ndoki NP (CAR)	agile mangabey ( <i>Cercopithecus agilis</i> )	wild	2	JQ073325,-36	JQ073364,-85

NI-Netherlands, K-Kenya, CAR-Central African Republic; S. No. – number of samples; A. No. 18S/ITS – accession numbers for 18S-rDNA/ITS1-5.8SrRNA-ITS2 sequences in the GenBank.

doi:10.1371/journal.pntd.0002140.t002

# Hospedadores de *Neobalantidium coli*

**Table 3.** The summary of isolates from domestic pigs, cattle and edible frogs.

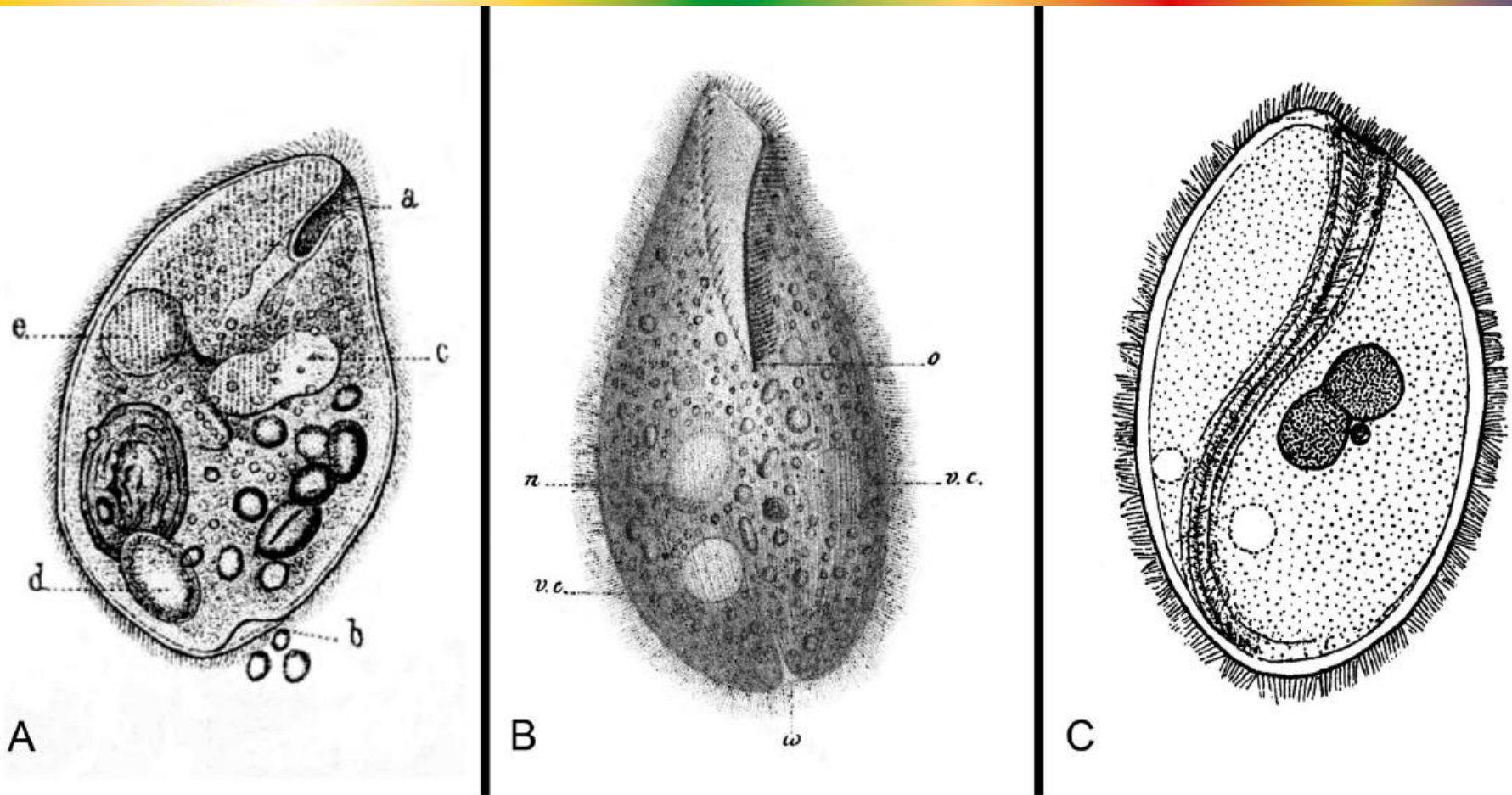
Site (State)	Host species	S. No.	A. No. 18S	A. No. ITS
Czech Republic	domestic pig ( <i>Sus scrofa domestica</i> )	5	JQ073304,-21-24	JQ073342,-60-63
Madagascar	domestic pig ( <i>Sus scrofa domestica</i> )	3	JQ073320	JQ073357-59
Cameroon	domestic pig ( <i>Sus scrofa domestica</i> )	2	JQ073334	JQ073379-80
Kenya	domestic pig ( <i>Sus scrofa domestica</i> )	1	JQ073333	JQ073378
Central African Rep.	domestic pig ( <i>Sus scrofa domestica</i> )	2	JQ073326	JQ073365-66
Czech Republic	wild boar ( <i>Sus scrofa</i> )	1	JQ073319	JQ073356
Belgium	cattle ( <i>Bos taurus</i> )	2	JQ073337	JQ073386-87
Romania	edible frog ( <i>Pelophylax kl. esculentus</i> )	2	JQ408692	JQ408693-94

S. No.-number of samples; A. No. 18S/ITS – accession numbers for 18S-rDNA/ITS1-5.8SrRNA-ITS2 sequences in the GenBank.  
doi:10.1371/journal.pntd.0002140.t003



# Especies similares

Pomajbí'kova' K, Oborník M, Hora'k A, Petz'elkova' KJ, Grim JN, et al. (2013) Novel Insights into the Genetic Diversity of *Balantidium* and *Balantidium*-like Cyst-forming Ciliates. PLoS Negl Trop Dis 7(3): e2140.

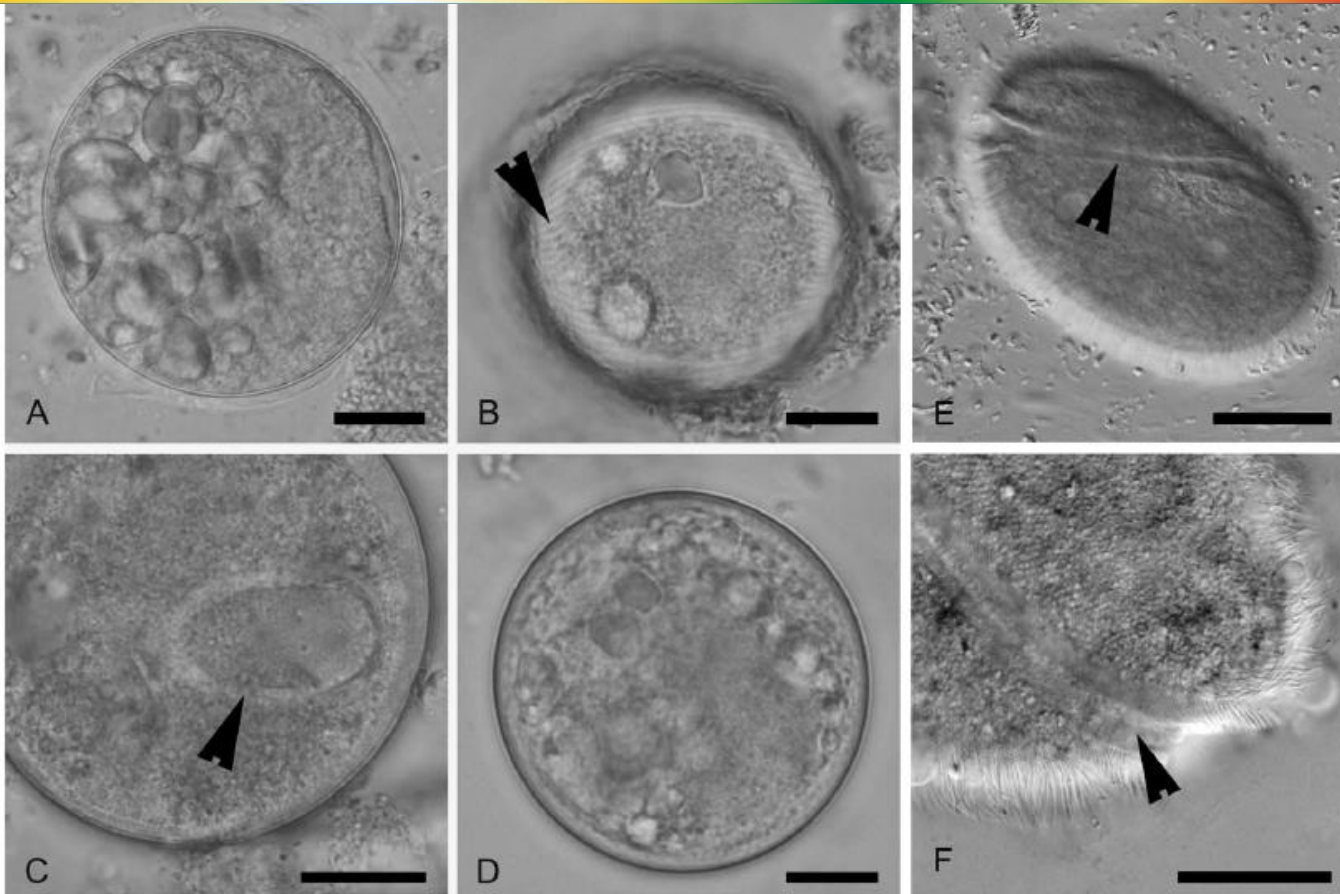


**Figure 3. Reproduction of the original drawings of trophozoites of *Paramecium coli*, *Balantidium entozoon* and *Buxtonella sulcata*. A. *P. coli* from Malmstein (1857); B. *B. entozoon* from Claparéde & Lachmann (1858); and C. *B. sulcata* from Jameson (1926).**  
doi:10.1371/journal.pntd.0002140.g003



# Especies similares

Pomajbíková K, Oborník M, Horaík A, Petrzálková KJ, Grim JN, et al. (2013) Novel Insights into the Genetic Diversity of *Balantidium* and *Balantidium*-like Cyst-forming Ciliates. PLoS Negl Trop Dis 7(3): e2140.



**Figure 4. A–D: Comparison of cysts of *Neobalantidium coli*, *Buxtonella sulcata* and a *Buxtonella*-like ciliate; scale bars = 10 µm.** A. Cyst of *N. coli* from a domestic pig with visible ingested starch grains inside. B, D. Cysts of *Buxtonella*-like ciliate from an agile mangabey showing the trophozoite with visible rows of cilia (B, arrowhead). C. Cyst of *B. sulcata* from cattle with visible macronucleus (arrowhead). E. Trophozoite of *Buxtonella sulcata* with typical sulcus (arrowhead); scale bar = 20 µm. F. Detail of sulcus of *Buxtonella sulcata* (arrowhead); scale bar = 5 µm.  
doi:10.1371/journal.pntd.0002140.g004

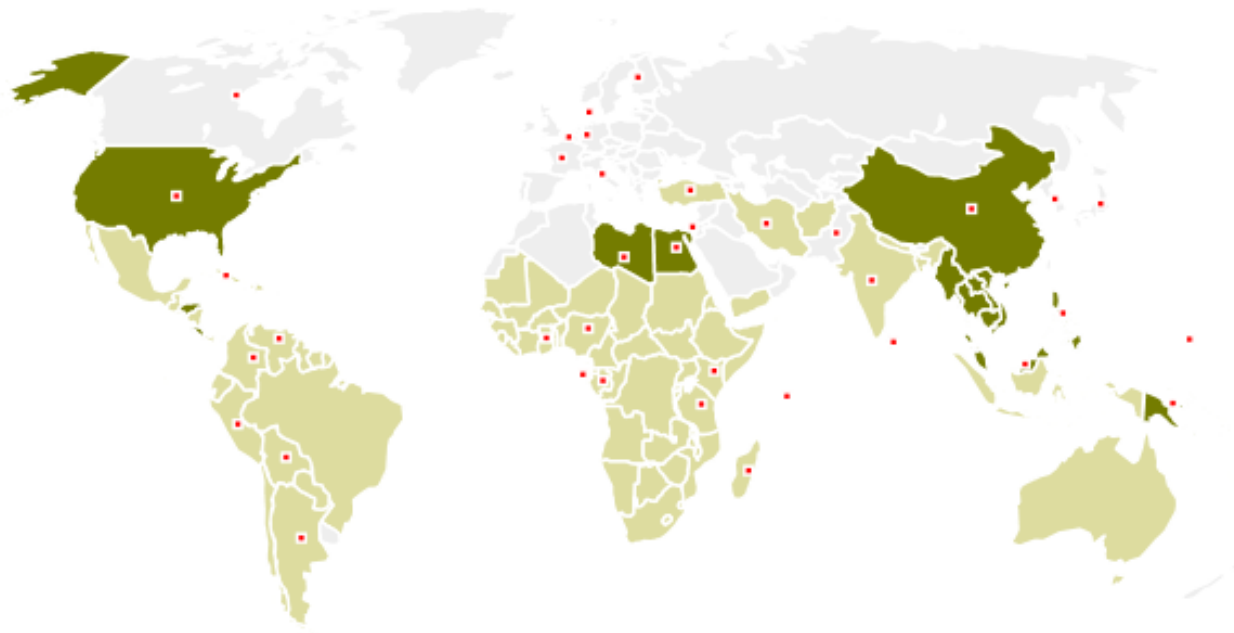
# Neobalantidiasis

## Prevalencia Mundial

### Balantidiasis: Global distribution



Disease is endemic or potentially endemic to 109 countries



Not Endemic



Sporadic



Endemic



Country note

# Neobalantidiasis

## Epidemiología en Colombia



**Tabla 1**

Protozoos intestinales patógenos identificados según regiones.  
Encuesta Nacional de Morbilidad, 1980

Protozoos patógenos	*Región del Atlántico	*Región Central	*Región del Pacífico	*Región Oriental	Santa fé de Bogotá
<i>Entamoeba histolytica</i>	16,4%	10,4%	14,3%	10%	10%
<i>Giardia lamblia</i>	15,7%	13,3%	13,3%	15%	10,8%
<i>Balantidium coli</i>	0,2%	-	0,2%	-	-
<i>Tricomonas intestinalis</i>	0,2-1%	0,2-1%	-	-	0,2-1%

\* Departamentos en: *Región del Atlántico* (Atlántico, Bolívar, Cesar, Córdoba, Guajira, Magdalena, Sucre). *Región Central* (Antioquia, Caldas, Huila, Tolima, Armenia, Quindío, Risaralda). *Región Pacífica* (Chocó, Cauca, Valle del Cauca, Nariño). *Región Oriental* (Boyacá, Norte de Santander, Santander, Casanare, Cundinamarca y Meta).

- No se mostró la prevalencia de estos parásitos en estas regiones, pues donde se obtuvo no fue significativa.

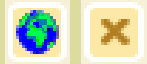
**Fuente:** Elaboración propia de los autores con datos de Parasitismo Intestinal. Bogotá: Instituto Nacional de Salud, 2000.



# Neobalantidiasis

## Prevalencia en Colombia

### Balantidiasis in Colombia



#### Prevalence surveys:

0.8% of infants and children with diarrhea in Sincelejo and Cartagena (1998 to 2000) <sup>1</sup>

#### [List of all references](#)

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**MinSalud**

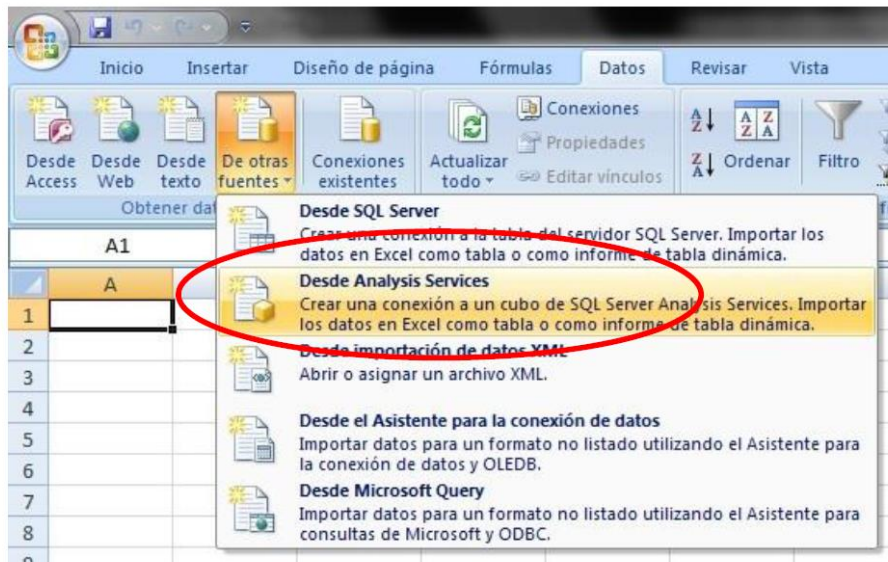
Ministerio de Salud  
y Protección Social

**PROSPERIDAD  
PARA TODOS**

## SISTEMA INTEGRAL DE INFORMACION DE LA PROTECCION SOCIAL – SISPRO

### SISTEMA DE GESTION DE DATOS – SGD

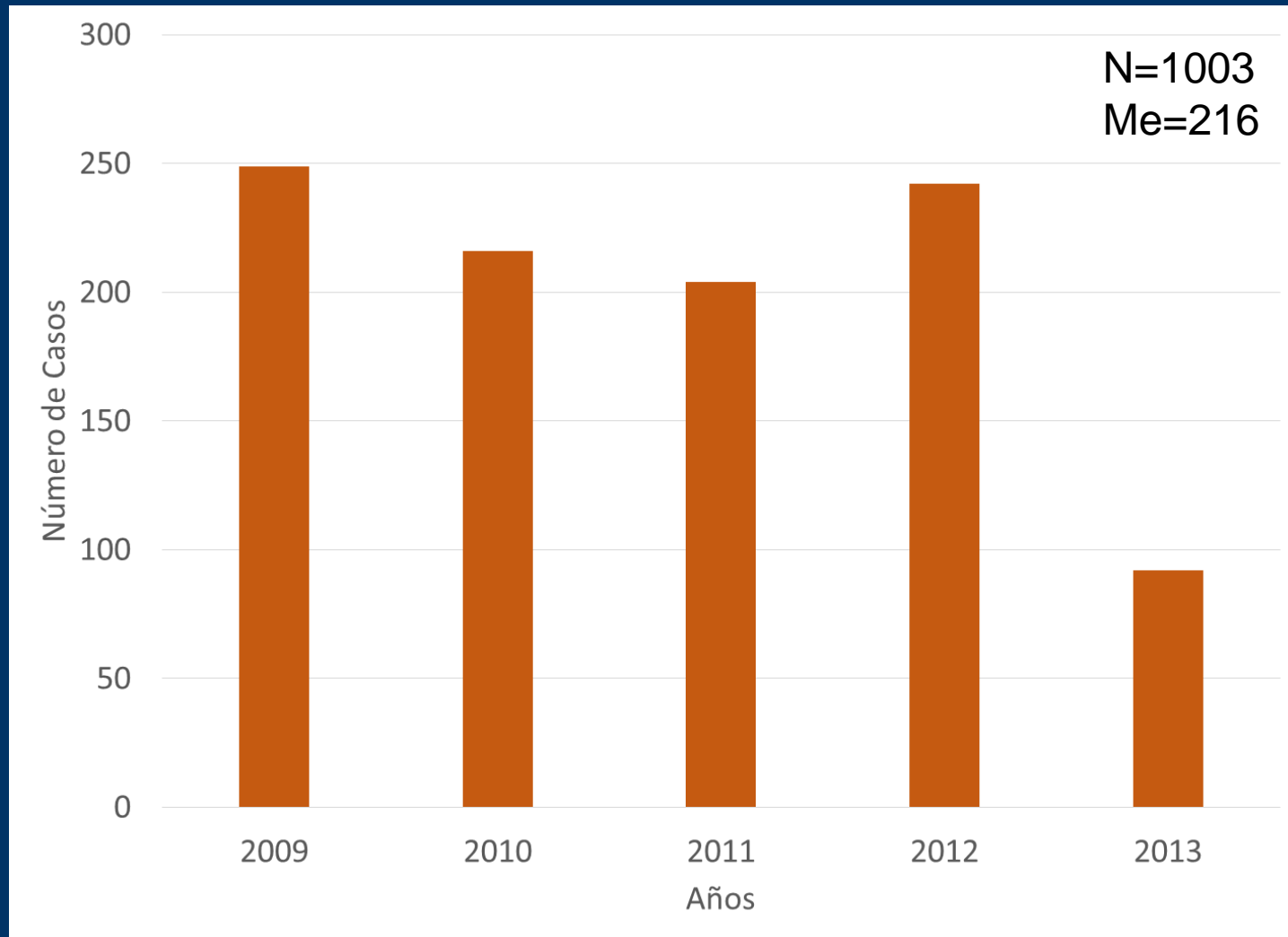
#### Documentación Reporte de Prestación Individual de Servicios de Salud



Rótulos de fila	Número de Atenciones
1 - CONSULTAS	58.547.250
2 - PROCEDIMIENTOS DE SALUD	74.228.238
3 - URGENCIAS	1.693.700
4 - HOSPITALIZACIONES	925.340
<b>Total general</b>	<b>136.094.528</b>

# Neobalantidiasis (A07.0) (CIE-10)

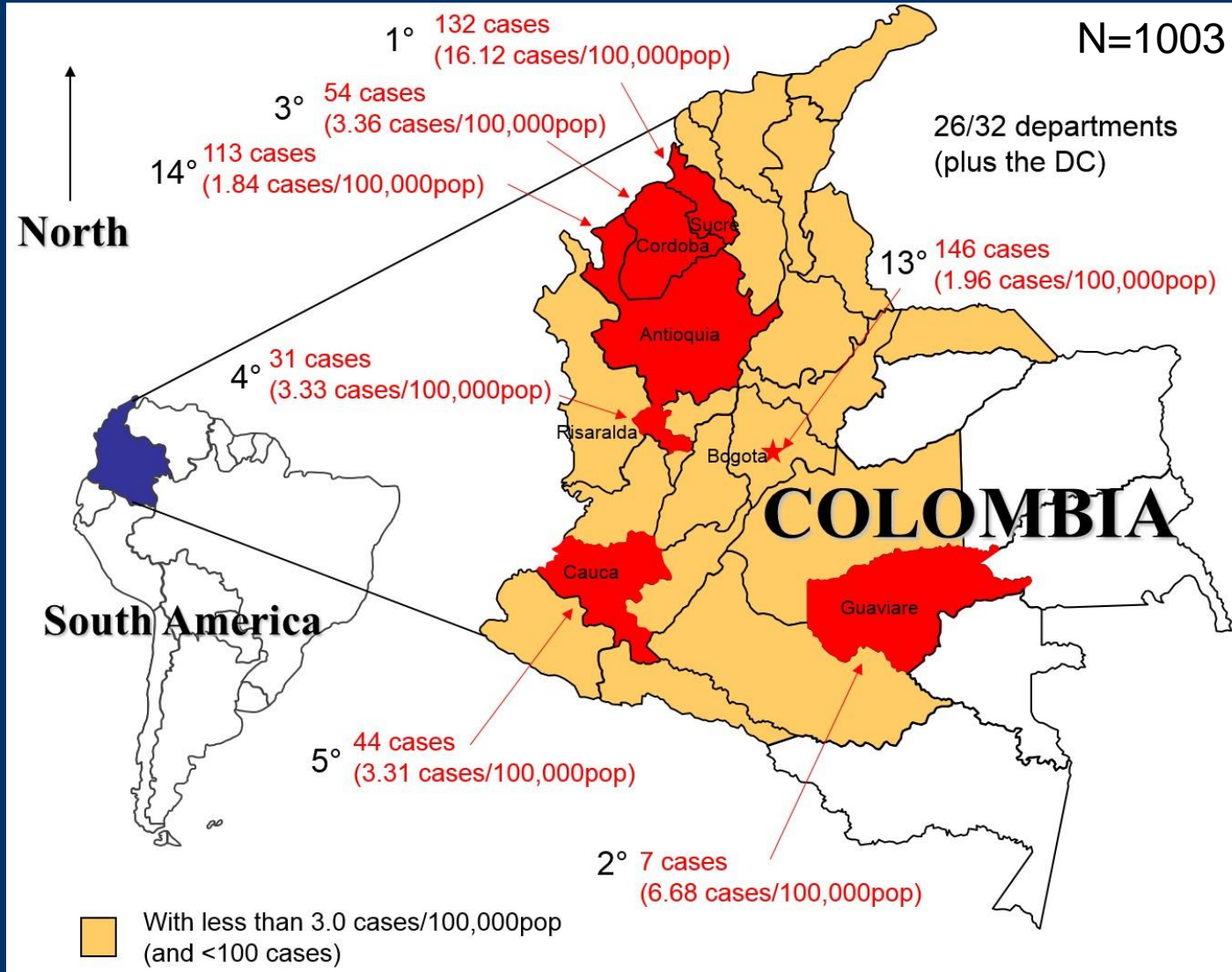
## Incidencia anual en Colombia, 2009-2013





# Neobalantidiasis (A07.0) (CIE-10)

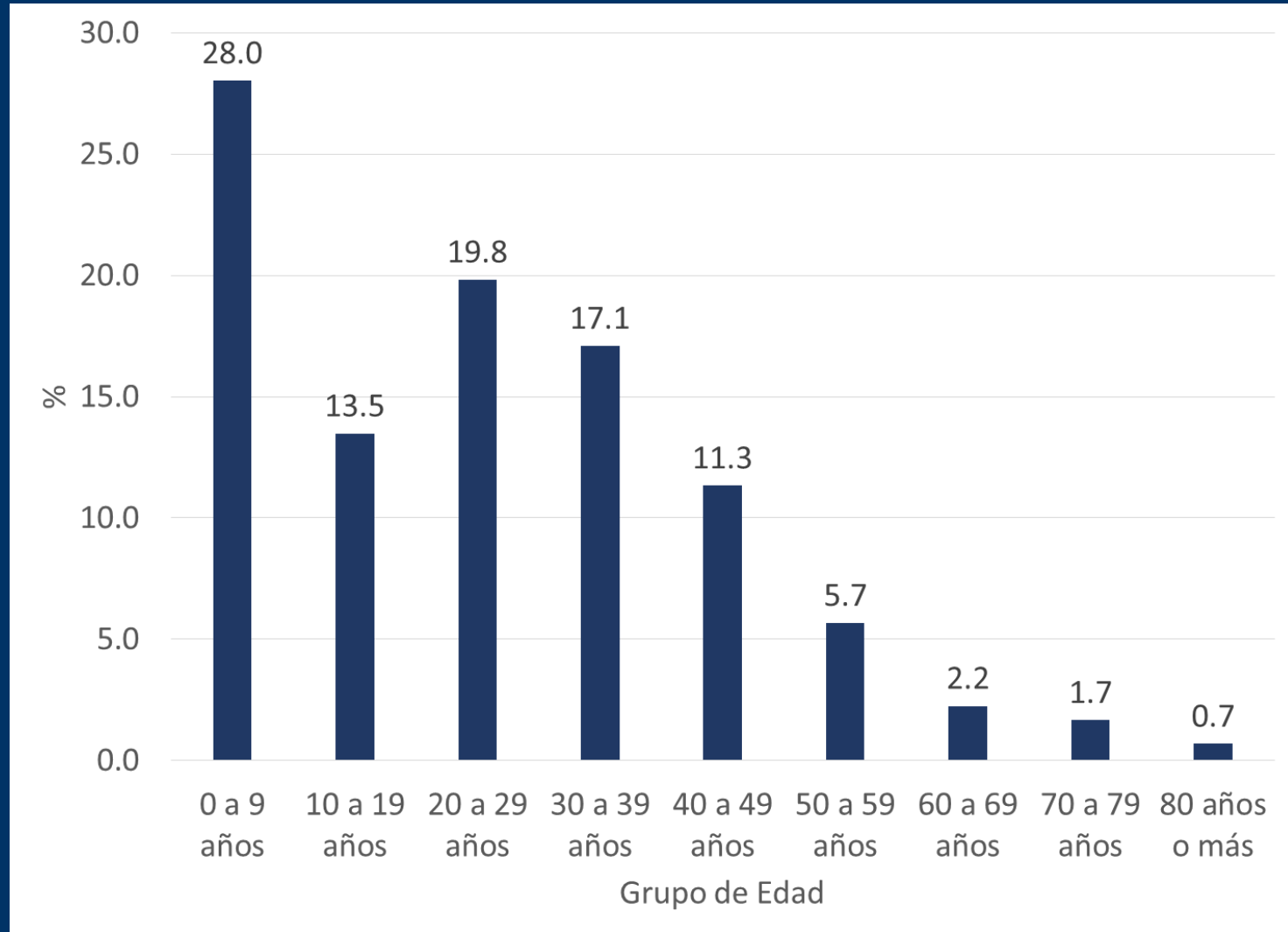
## Incidencia anual en Colombia, 2009-2013



Bogotá  
Sucre  
Antioquia  
(39%)

# Neobalantidiasis (A07.0) (CIE-10)

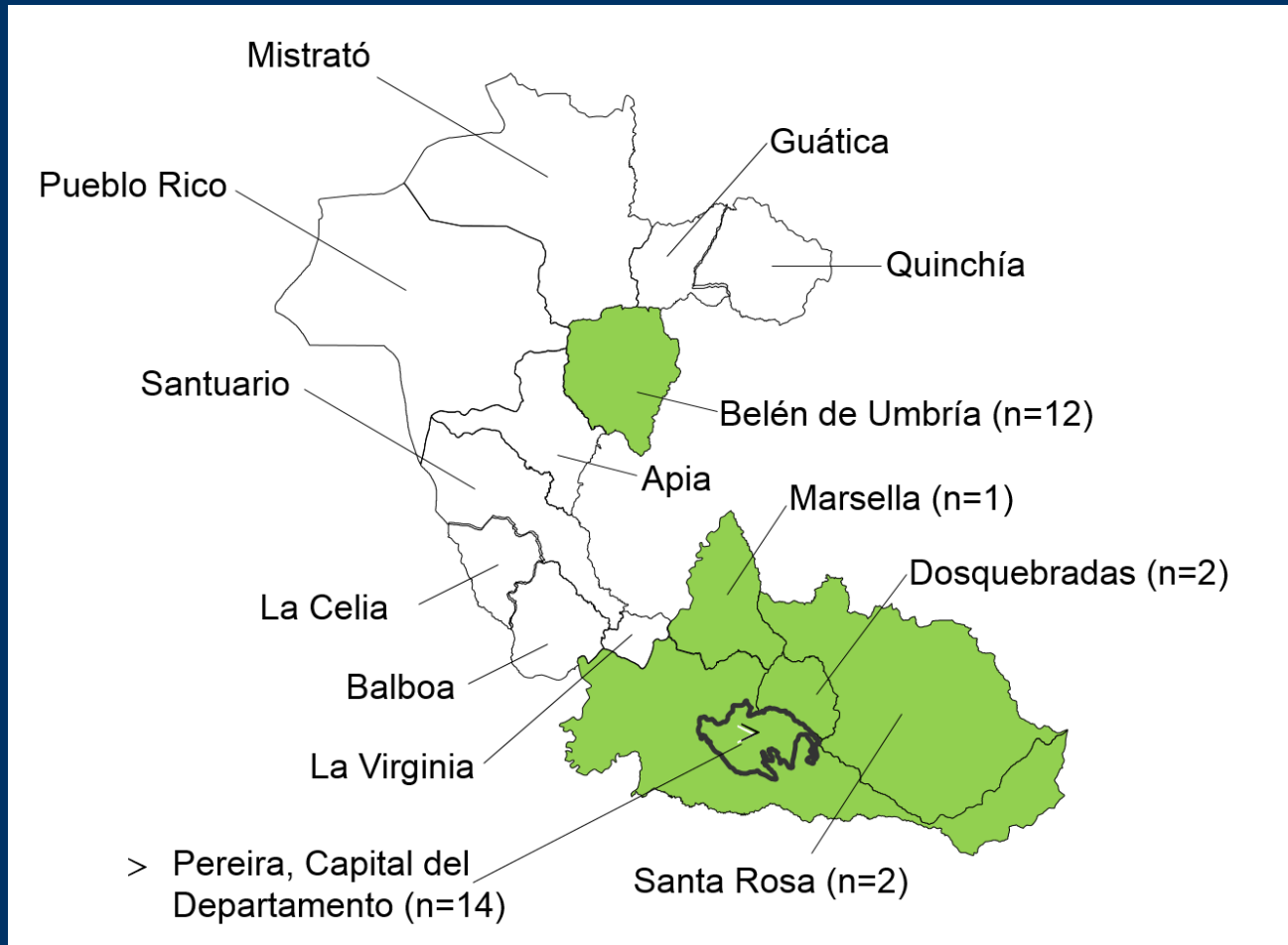
## Incidencia anual en Colombia, 2009-2013



# Neobalantidiasis (A07.0) (CIE-10)

Incidencia anual en Colombia, 2009-2013

Risaralda (n=31)





# Neobalantidiasis

## Prevalencia en Colombia

### Ámbito animal



SUBGERENCIA DE PROTECCIÓN Y REGULACIÓN PECUARIA  
Grupo de Epidemiología Veterinaria

Sistema de Información y Vigilancia  
Epidemiológica

COLOMBIA,  
SANIDAD ANIMAL 2008

<sup>1</sup>JAIME E. ORJUELA M.; <sup>2</sup>OLGA LUCÍA DÍAZ M.; <sup>3</sup>PEDRO M. GONZÁLEZ G.;  
<sup>4</sup>JORGE ORTIZ C.; <sup>5</sup>WILLIAM E. MONROY G.; <sup>6</sup>ADRIANA PATIÑO A.

**Tabla 45. Especie porcina:**  
*Condiciones patológicas diagnosticadas y tasas de morbi-mortalidad. Colombia 2007*

CONDICION PATOLOGICA	PREDIOS AFECTADOS	POBLACION A RIESGO	INCIDENCIA X 100	MORTALIDAD X 1000
ASCARIDIASIS	2	3	67	-
BALANTIDIASIS	9	7246	5	31
BRONQUITIS	2	625	22	198
CIRCOVIROSIS	4	4344	6	13
COCCIDIOSIS	4	173	20	-
COLIBACILOSIS	20	25142	2	13
DIARREA	2	23	30	43
ENFERMEDAD DE LOS EDEMAS	2	31	6	65

# Neobalantidiasis

## Prevalencia en Colombia

### Ámbito animal

Tabla 47. Pérdidas estimadas por mortalidad según la condición patológica y la especie. Colombia 2007 (continuación).

ESPECIE	ENFERMEDADES	ANIMALES MUERTOS	VALOR TOTAL \$	%	
BOVINA	HEMATURIA VESICAL	1	1,101,201		
	IBR	1	1,101,201		
	INTOXICACION	28	30,833,628		
	LEPTOSPIROSIS	6	6,607,206		
	LEUCOSIS	3	3,303,603		
	MASTITIS	8	8,809,608		
	MOLIBDENOSIS	2	2,202,402		
	PAPILOMATOSIS	4	4,404,804		
	PARASITISMO GASTROINTESTINAL	56	61,667,256		
	PASTERELOSIS	10	11,012,010		
	SEPTICEMIA HEMORRAGICA	5	5,506,005		
	TRICHOSTRONGILODIASIS	16	17,619,216		
	TRIPANOSOMOSIS	90	99,108,090		
	SUBTOTAL		1,395	1,536,175,395	44
PORCINA	PESTE PORCINA CLASICA	47	11,656,000		
	<b>BALANTIDIASIS</b>	228	56,544,000		
	BRONQUITIS	124	30,752,000		
	CIRCOVIROSIS	207	51,336,000		
	COLIBACILOSIS	330	81,840,000		
	DIARREA	1	248,000		
	ENFERMEDAD DE LOS EDEMAS	2	496,000		
	ENTERITIS	23	5,704,000		
	ESTAFILOCOCCOSIS	11	2,728,000		
	LEPTOSPIROSIS	32	7,936,000		
	MICOPLASMOSIS	240	59,520,000		
	NEUMONIA	393	97,464,000		
	PARVOVIROSIS	3	744,000		
	PARASITISMO GASTROINTESTINAL	18	4,464,000		
	PLEURONEUMONIA	4	992,000		
	PRRS	51	12,648,000		
	SEPTICEMIA	27	6,696,000		
	TRICHOMONIASIS INTESTINAL	184	45,632,000		
	SUBTOTAL		1925	477,400,000	14

# Neobalantidiasis

## Prevalencia en Colombia

### Ámbito animal



**Tabla 44.** Especie porcina: Condiciones patológicas diagnosticadas y tasas de morbi-mortalidad. Colombia 2011

CONDICIÓN PATOLÓGICA	EXPLOTACIONES AFECTADAS	POBLACIÓN A RIESGO	INCIDENCIA x 100	MORTALIDAD x 1000
BALANTIDIASIS	1	103	7	10
CIRCOVIRUS	13	4569	8	28
COLIBACILOSIS	10	11207	57	1
ENTEROCOLITIS	4	2386	9	26
ERISIPELA	12	135	26	-
LEPTOSPIROSIS	37	419	11	-
MICOPLASMOSIS	34	780	46	20
NEUMONÍA	6	753	1	11
PARVOVIROSIS	18	350	40	-
PLEURONEUMONIA	26	480	23	-
PARASITISMO GASTROINTESTINAL	1	10	10	100
PRRS	81	1819	12	4
SALMONELOSIS	5	318	9	55
<b>TOTAL</b>	<b>248</b>	<b>23.329</b>	<b>-</b>	<b>-</b>

# Neobalantidiasis

## Ciclo de Vida

CLINICAL MICROBIOLOGY REVIEWS, Oct. 2008, p. 626–638

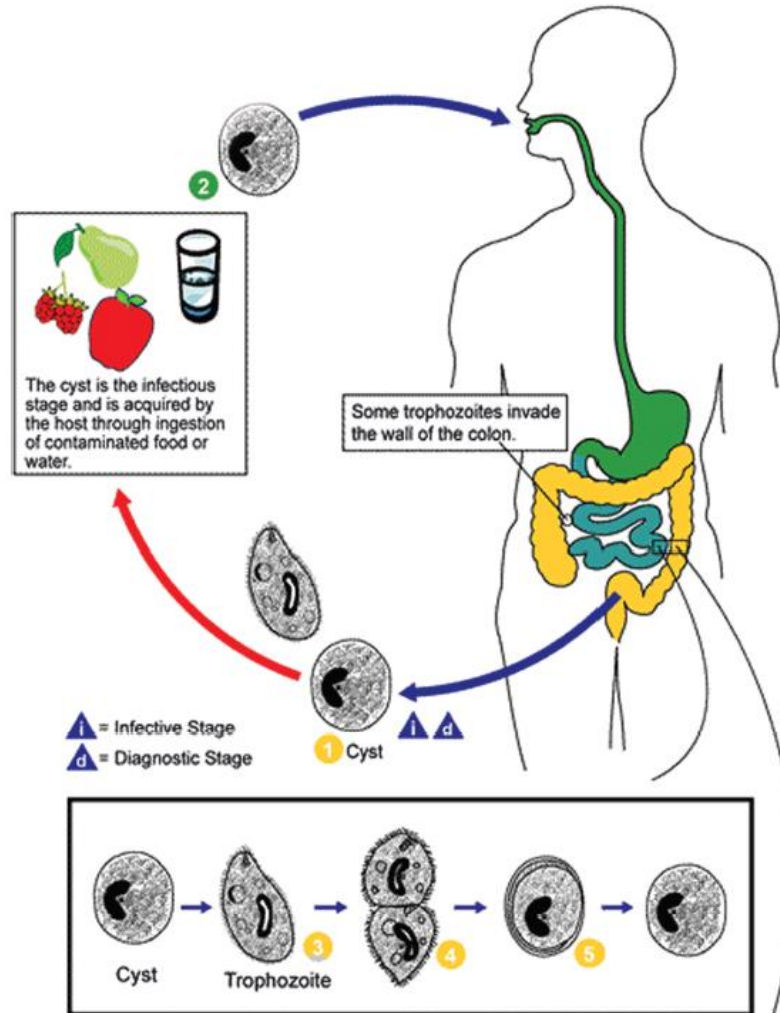


FIG. 1. Life cycle of *Balantidium* infection in humans. The trophozoites and cysts are shed in feces (1), and if the cysts, in particular, contaminate drinking water or food, the infection can be spread to other humans (2). Fruits and vegetables may also be contaminated by cysts and serve as a means of transmission. The bottom panel illustrates the pattern of encystment and asexual reproduction in trophic ciliates. (Reprinted from the CDC-DPDx Parasite Image Library [<http://www.dpd.cdc.gov/dpdx/>].)

# Neobalantidiasis

## Trofozoitos y patología

CLINICAL MICROBIOLOGY REVIEWS, Oct. 2008, p. 626–638

628 SCHUSTER AND RAMIREZ-AVILA

CLIN. MICROBIOL. REV.

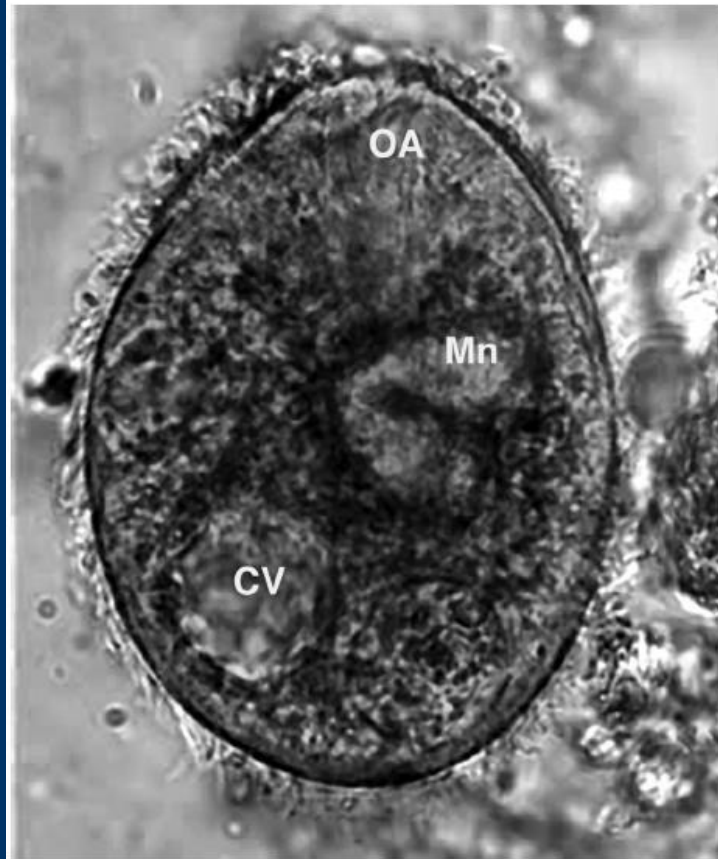


FIG. 2. Trophic stage of *Balantidium*. The surface of the organism is uniformly covered by cilia, and the lighter areas in the cytoplasm represent a contractile vacuole (CV) and the macronucleus (Mn). The oral apparatus (OA) is at the apical end of the organism in this micrograph. (Reprinted from the CDC-DPDx Parasite Image Library [<http://www.dpd.cdc.gov/dpdx/>].)

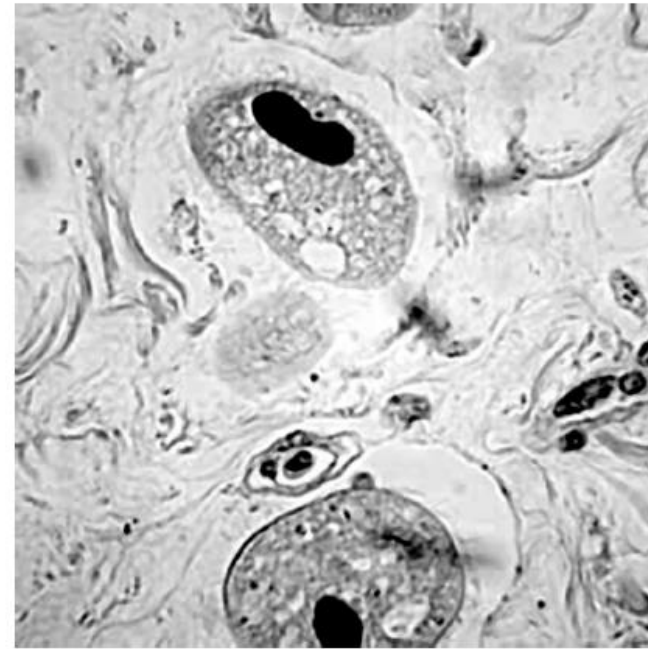


FIG. 3. View of intestinal lumen with two trophic ciliates. The prominent macronucleus is seen in this stained section. The upper ciliate shows the small micronucleus nestled against the macronucleus. (Reprinted from the CDC-DPDx Parasite Image Library [<http://www.dpd.cdc.gov/dpdx/>].)



# Neobalantidiasis

## Trofozoitos y patología

CLINICAL MICROBIOLOGY REVIEWS, Oct. 2008, p. 626–638

628 SCHUSTER AND RAMIREZ-AVILA

CLIN. MICROBIOL. REV.

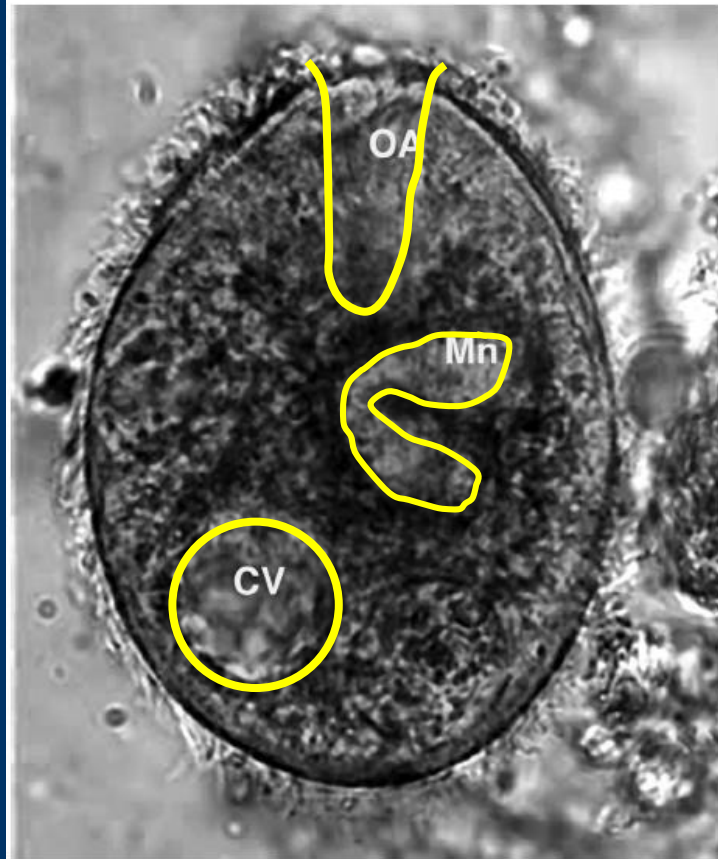


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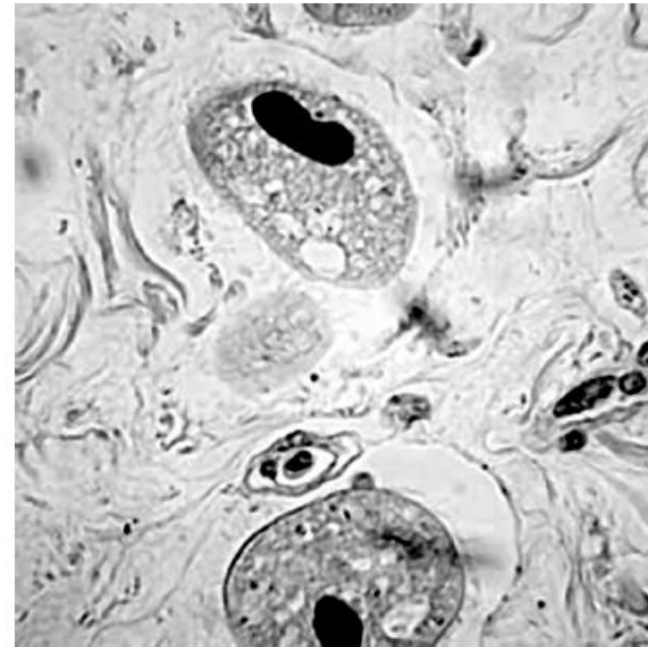


FIG. 3. View of intestinal lumen with two trophic ciliates. The prominent macronucleus is seen in this stained section. The upper ciliate shows the small micronucleus nestled against the macronucleus. (Reprinted from the CDC-DPDx Parasite Image Library [<http://www.dpd.cdc.gov/dpdx/>].)

# Neobalantidiasis

## Quistes

CLINICAL MICROBIOLOGY REVIEWS, Oct. 2008, p. 626–638

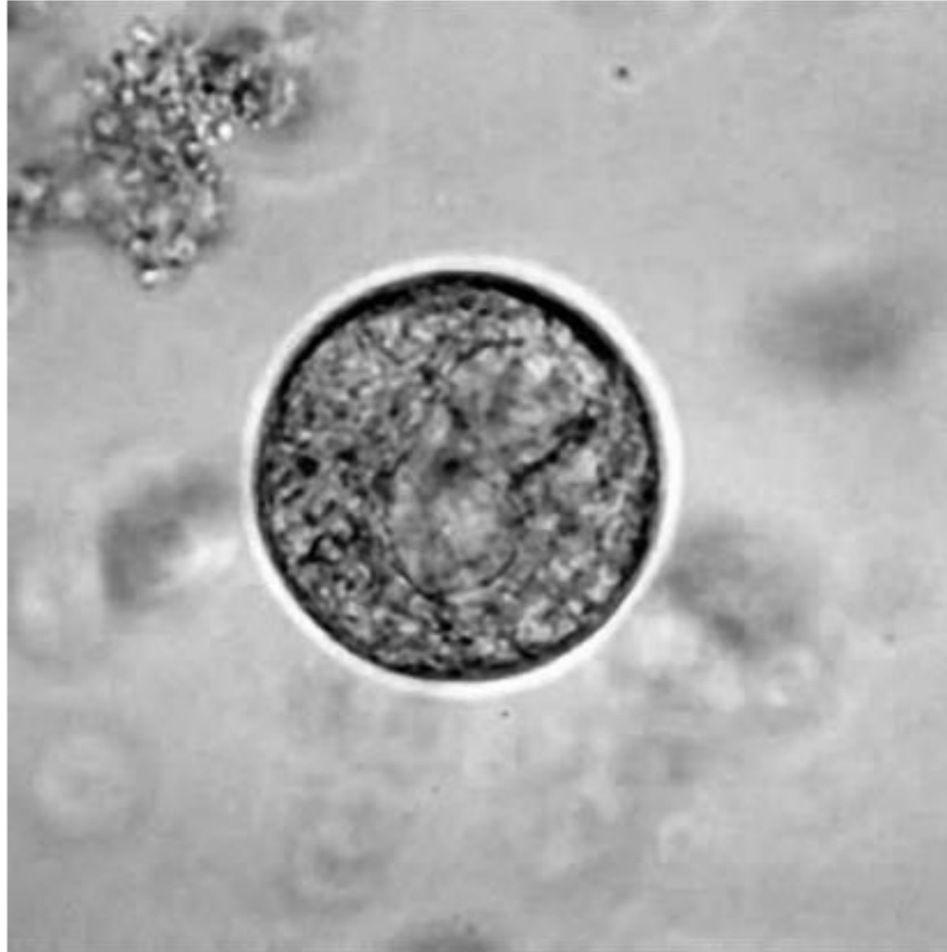


FIG. 4. Encysted ciliate. The cytoplasm is protected from environmental stress within a double-walled covering. (Reprinted from the CDC-DPDx Parasite Image Library [<http://www.dpd.cdc.gov/dpdx/>].)

# Neobalantidiasis (CIE-10 A07.0)

## Generalidades

- Enfermedad Causada por un ciliado:  
*Balantidium ó Neobalantidium coli*
- Principales Reservorios: Cerdos, primates no humanos, roedores
- Transmisión: Agua y Alimentos contaminados
- Período de Incubación: 1d - 7d (rango 1d - 60d)
  
- Clínica
- Disentería (ciliar), a menudo con vómito
- Puede confundirse con la amebiasis intestinal
- Dolor abdominal, pérdida de peso
- Es más común en zonas de crianza de cerdos
- Síntomas pueden durar de 1 a 4 semanas y puede haber recurrencia
- Puede ocurrir patología extra-intestinal (neumonía)



# Neobalantidiasis (CIE-10 A07.0)

## Generalidades

- Neumonía por *N. coli*
- Personas con exposición ocupacional y patologías debilitantes de base
- Pacientes inmunosuprimidos

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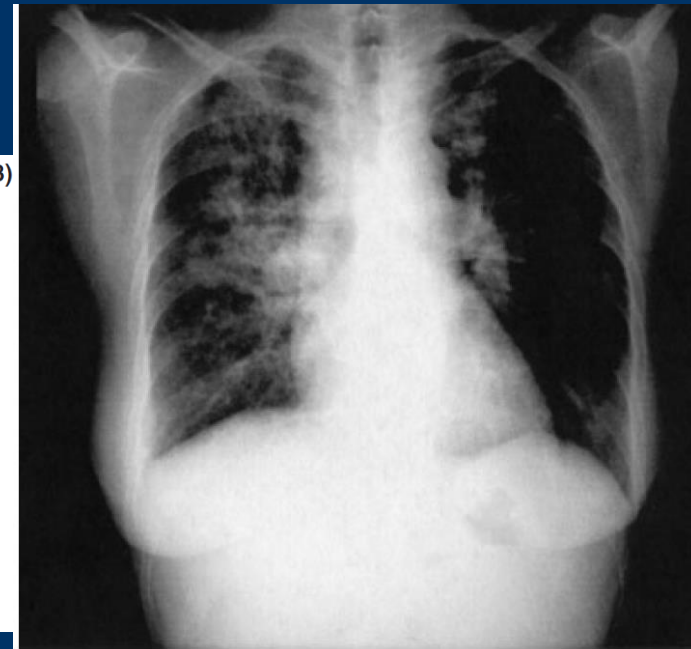
### **Pulmonary *Balantidium coli* Infection in a Leukemic Patient**

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**Fig. 1.** Chest X ray showing bilateral, diffuse micronodular, and interstitial lesions in the lungs.



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## Generalidades

- Neumonía por *N. coli*
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- Pacientes inmunosuprimidos

## Balantidium coli Pneumonia in an Immunocompromised Patient

ALEXANDRA VASILAKOPOULOU<sup>1</sup>, KYRIAKI DIMARONGONA<sup>1</sup>, ANASTASIA SAMAKOVL<sup>2</sup>, KONSTANTINOS PAPADIMITRIS<sup>2</sup> and ATHINA AVLAMI<sup>1</sup>

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A fatal case is reported of *Balantidium coli* pneumonia in a 71-y-old woman suffering from anal cancer. The diagnosis was made by the discovery of motile trophozoites in a wet mount from bronchial secretions. The usual habitat of the parasite is the colon; lung balantidiasis is very rare.

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## CASE REPORT

A 71-y-old woman who lived in Athens presented with a medical history of non-insulin-dependent diabetes mellitus since 1981 and arterial hypertension since 1986. Anal cancer was diagnosed in 2001, for which she received chemotherapy and radiation therapy in July 2001. During treatment she complained of mild diarrhoea. The examination of stools was normal and no parasites were discovered. After 15 d of persistent diarrhoea, she became febrile and was admitted to hospital. She had neutropenia, and was placed under antibiotic treatment with amikacin and ceftazidime. Somatostatin was also part of her therapy. After 5 d she left the hospital afebrile and without diarrhoea. The fever was of unknown origin and the diarrhoea was attributed to radiation therapy. For the following 6 months she was in relatively good condition.

*On the second day in the ICU the microscopic examination of the bronchial secretions wet mount led to the discovery of motile trophozoites of Balantidium coli.*



# Neobalantidiasis (CIE-10 A07.0)

## Generalidades

- Disentería en pacientes inmunosuprimidos evoluciona peor

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### • CASE REPORT •

## Dysentery caused by *Balantidium coli* in a patient with non-Hodgkin's lymphoma from Turkey

Süleyman Yazar, Fevzi Altuntas, Izzet Sahin, Metin Atambay

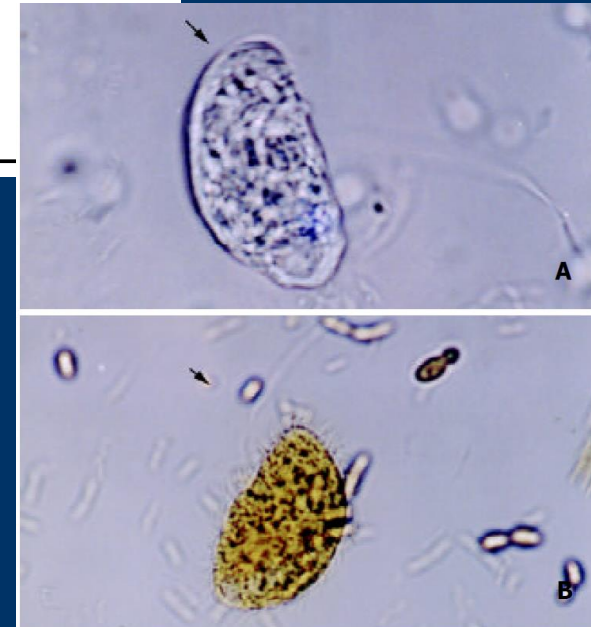


Figure 1 *Balantidium coli* trophozoites in native (A) and lugol (B) preparations (original magnification  $\times 400$ ).

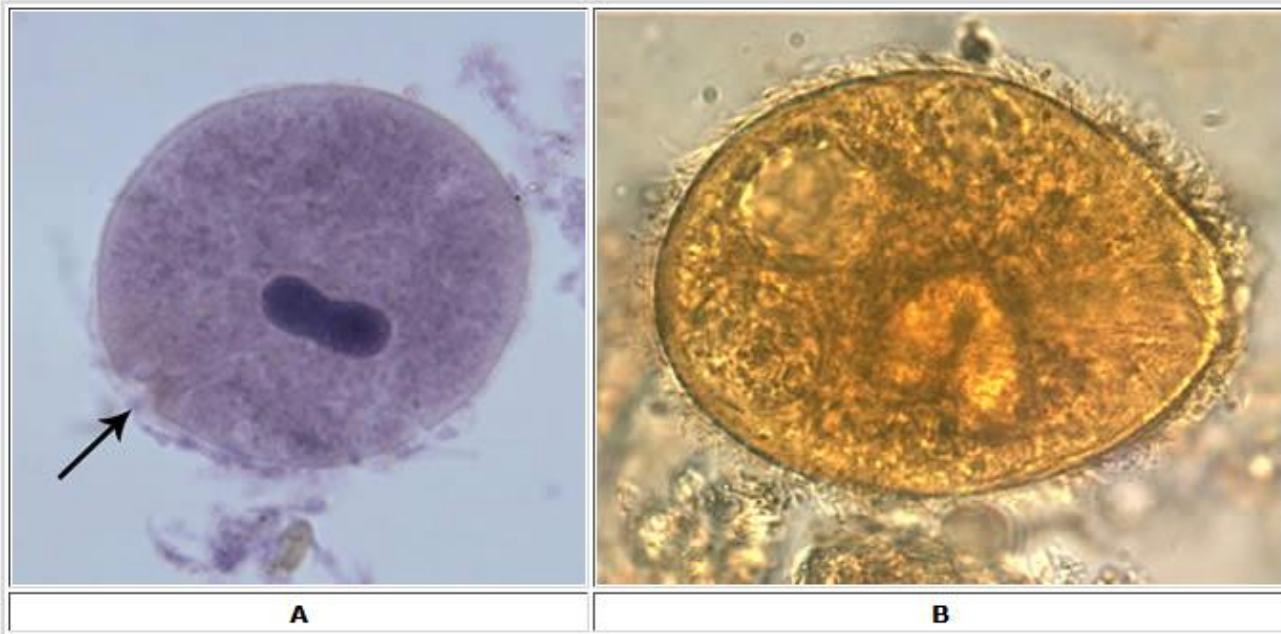
# Neobalantidiasis

## Diagnóstico

Diagnóstico: Microscopía de heces, aspirados de colon o de bronquios.

### Microscopy

Both *Balantidium coli* trophozoites and cysts are found in stool. Trophozoites are characterized by: their large size (40  $\mu\text{m}$  to 200  $\mu\text{m}$ ), the presence of cilia on the cell surface, a cytostome, and a bean shaped macronucleus which is often visible and a smaller, less conspicuous micronucleus. Cysts are seen less frequently and range in size from 50  $\mu\text{m}$  to 70  $\mu\text{m}$ . *B. coli* can also invade tissue.



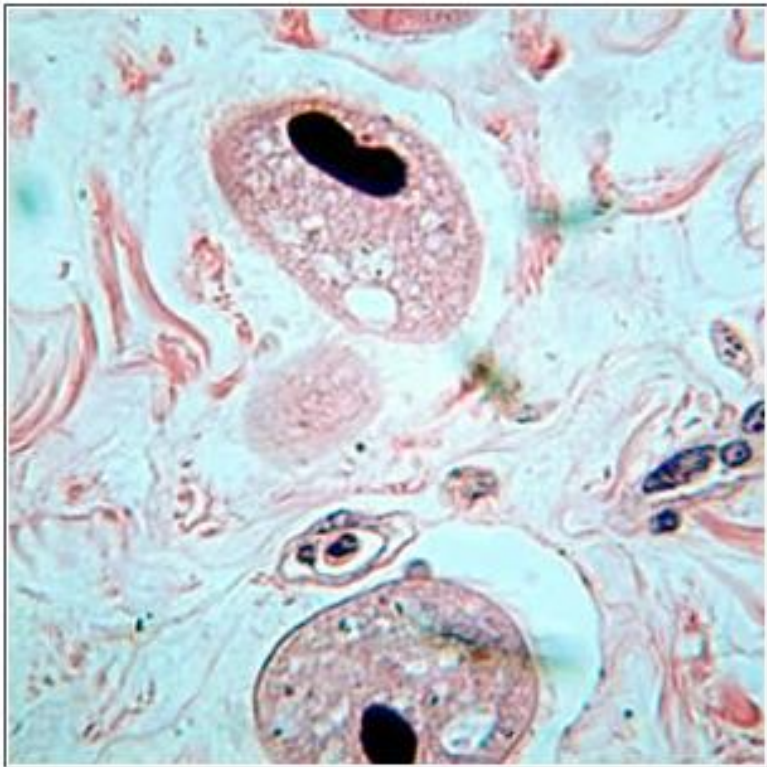
**A:** *B. coli* trophozoite in a Mann's hematoxylin stained smear, 500 $\times$  magnification. Note the cytosome (black arrow) and the bean shaped macronucleus.

**B:** *B. coli* trophozoite in a wet mount, 1000 $\times$  magnification. Note the visible cilia on the cell surface. Image contributed by the Oregon Public Health Laboratory.

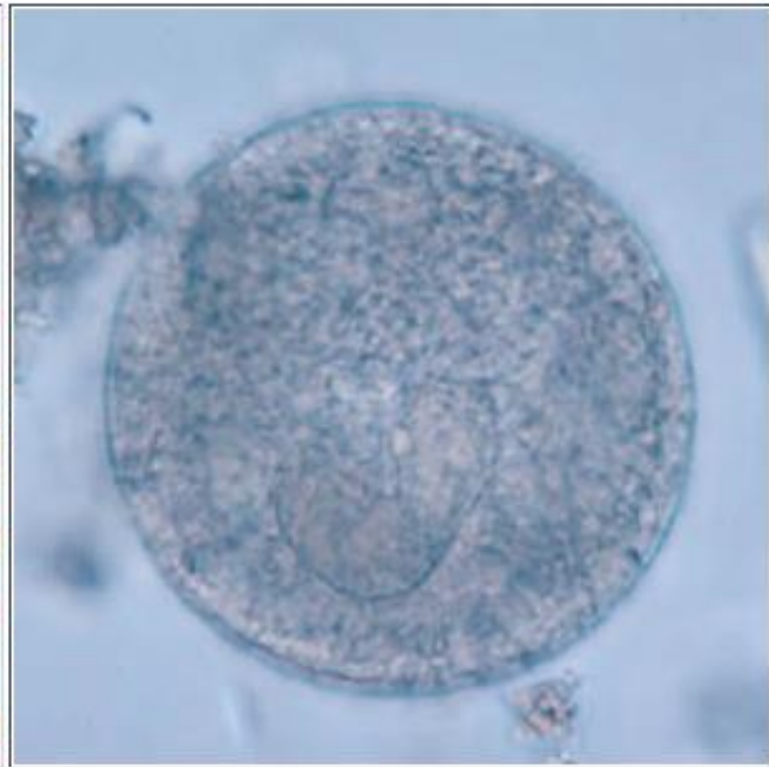
# Neobalantidiasis

## Diagnóstico

Diagnóstico: Microscopía de heces, aspirados de colon o de bronquios.



C



D

C: *B. coli* trophozoites in tissue stained with hematoxylin and eosin.

D: *B. coli* cyst in a wet mount, unstained.

# Neobalantidiasis

## Tratamiento

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### Tratamiento

**Tetraciclina** 500 mg QID X 10d.

ó **Metronidazol** 750 mg TID X 5d.

ó **Iodoquinol** 650 mg TID X 20d

### Tratamiento en Niños

>/= 8 años: **Tetraciclina** 10 mg/kg QID (max 2g/d) X 10d.

<8 años: **Metronidazol** 15 mg/kg TID X 5d;

ó **Iodoquinol** 13 mg/kg TID X 20d

# Neobalantidiasis

## Conclusiones

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- Patología intestinal de poco pensada
- Es cosmopolita, ocurre tanto en países tropicales como en no tropicales, más frecuente en los primeros
- Zonas de riesgo, crianza de cerdos
- Pocos estudios en Colombia (2 en Medline)
- Transmisión oral-fecal
- Parasitosis transmitidas frecuentemente por alimentos
- Zoonosis



# Neobalantidiasis

## Conclusiones

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- Necesidad de estudio e investigación, control y vigilancia
- Tratamiento con tetraciclina o metronidazol
- Epidemiología desconocida en Risaralda