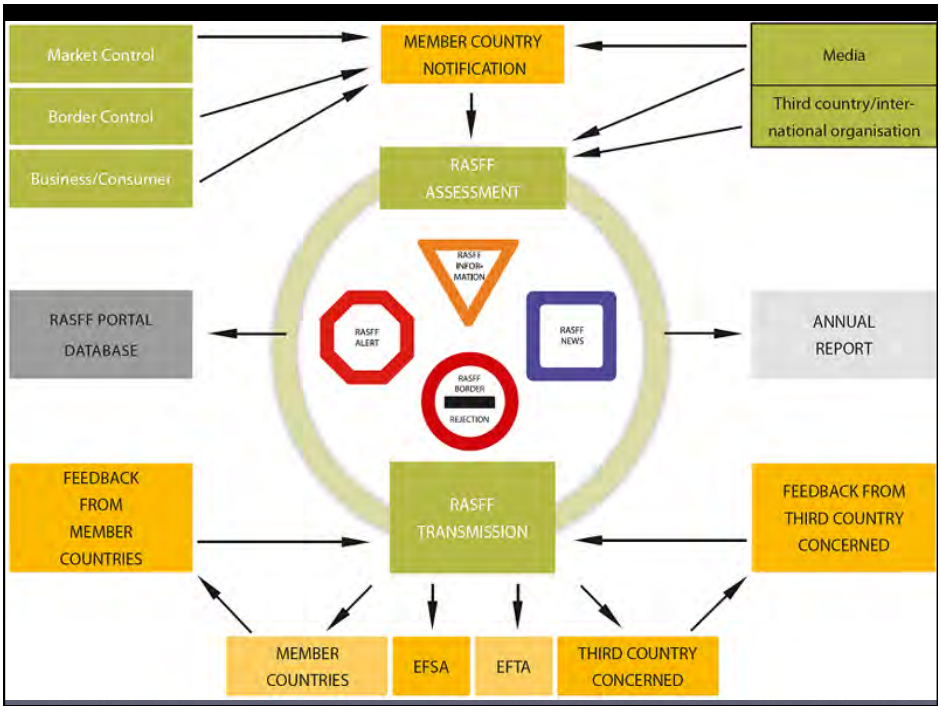
Sfide e opportunità per la sanità pubblica veterinaria: gestione sanitaria della fauna selvatica e sicureza alimentare

Beniamino Cenci Goga

Malattie infettive emergenti e zoonosi: dagli animali selvatici, ai domestici, all'uomo

| Rieti | 27 maggio 2016 | Aula Magna ASL Rieti |



Scope of the RASFF

The purpose of the RASFF is to provide the control authorities with an effective tool for exchange of information on measures taken to ensure food safety.

When a RASFF member has any information about a serious health risk deriving from food or feed, it must immediately notify the European Commission using RASFF. In particular, Member States have to notify the Commission if they take such measures as withdrawing or recalling food or feed products from the market in order to protect consumers' health and if rapid action is required. They also have to notify if they agreed with the responsible operator that a food or feed should not be placed on the market if the measure is taken on account of a serious risk. The same applies when the product in question is placed on the market under conditions. The Commission immediately transmits the notification to all members of the network.

Member States also have to notify all rejections of food or feed at a border post of the European Union on account of a health risk. The Commission needs to notify all border posts and the country of origin immediately of a border rejection.

In 2006, with the entry into force of the "Feed Hygiene" Regulation (EC) N° 183/2005, animal health and environmental risks were added to the scope in relation to feed. This means that from then on also notifications about pet food were made, which was previously excluded from the scope.

What is the responsibility of the European Commission in the RASFF?

The Commission, responsible for managing the system, is providing knowledge and a technological platform to facilitate transmission and handling of the **RASFF notifications**. It receives all notifications from members of the network and performs the following checks on them, prior to making them available to all members of the network:

- a completeness check
- legislative requirements
- verification if the subject of the notification falls within the **scope of the RASFF**
- translation into English of the information on the notification form
- classification of the notification
- members of the network flagged for action
- recurrences of similar problems relating to the same professional operator and/or hazard/country of origin.

The Commission must inform a non-member of RASFF (third countries) if a product subject to a notification has been exported to that country or when a product originating from that country has been the subject of a notification. In this way, the country can take corrective measures where needed and appropriate.

Il Ministero, con propria Circolare prot. 606/20.1/3/1110 del 15 maggio 2003, ha fornito indicazioni ai propri uffici periferici (UVAC, PIF, USMA) e alle Regioni e Province Autonome, in ordine alle competenze e alle modalità operative in caso di riscontro di "frode tossica o di prodotti nocivi o pericolosi per la salute pubblica" e ha invitato le Regioni e Province Autonome a predisporre un proprio sistema di allerta, per assicurare il flusso delle comunicazioni tra centro e periferia, nonché per fornire gli opportuni indirizzi alle Aziende Sanitarie Locali. L'Ufficio VIII della Direzione Generale della Sicurezza degli alimenti e della nutrizione del Ministero del Lavoro, Salute e Politiche sociali è il punto di contatto italiano per il sistema di allerta comunitario.

Il sistema di allerta rapido per alimenti e mangimi in ambito europeo (RASFF) consente di notificare, in tempo reale, i rischi diretti e indiretti per la salute pubblica connessi ad alimenti, mangimi e materiali a contatto con gli alimenti e quindi di adottare tempestivamente le opportune misure di salvaguardia.
La Direzione Generale per l'igiene e la sicurezza degli alimenti e la nutrizione ha redatto anche quest'anno un rapporto riguardante le principali problematiche sanitarie emerse nel corso dell'anno 2015, mettendo in evidenza i principali rischi notificati dai Paesi membri.

Attività

Complessivamente, nel 2015 si sono avute **2.967** notifiche contro le 3.097 del 2014 e le 3.136 del 2013. Si evidenzia, quindi, una diminuzione delle notifiche come avvenuto negli ultimi anni, a partire dal 2012.
La diminuzione del numero di segnalazioni è in parte dovuta ad una maggiore collaborazione amministrativa tra Paesi membri, che comunicano fra loro alcune non conformità di tipo "non grave" (esempio etichettatura non conforme ecc.), senza effettuare notifica attraverso il sistema RASFF.
Anche nel 2015 l'Italia risulta essere il primo Paese membro nel numero di segnalazioni inviate alla Commissione europea, dimostrando, come negli anni passati, un'**intensa attività di controllo sul territorio nazionale**, con un totale di **511** notifiche (pari al 17,2%), mentre nel 2014 le notifiche trasmesse dall'Italia sono state 506 (pari al 16.3%). In particolare, sono pervenute **137** segnalazioni da parte degli Assessorati alla Sanità, ASL e Comando Carabinieri per la tutela della Salute e **374** segnalazioni da parte degli Uffici periferici del Ministero della Salute (USMAF, UVAC e PIF).

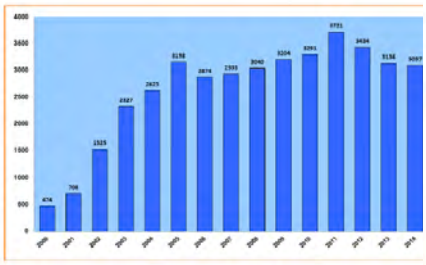
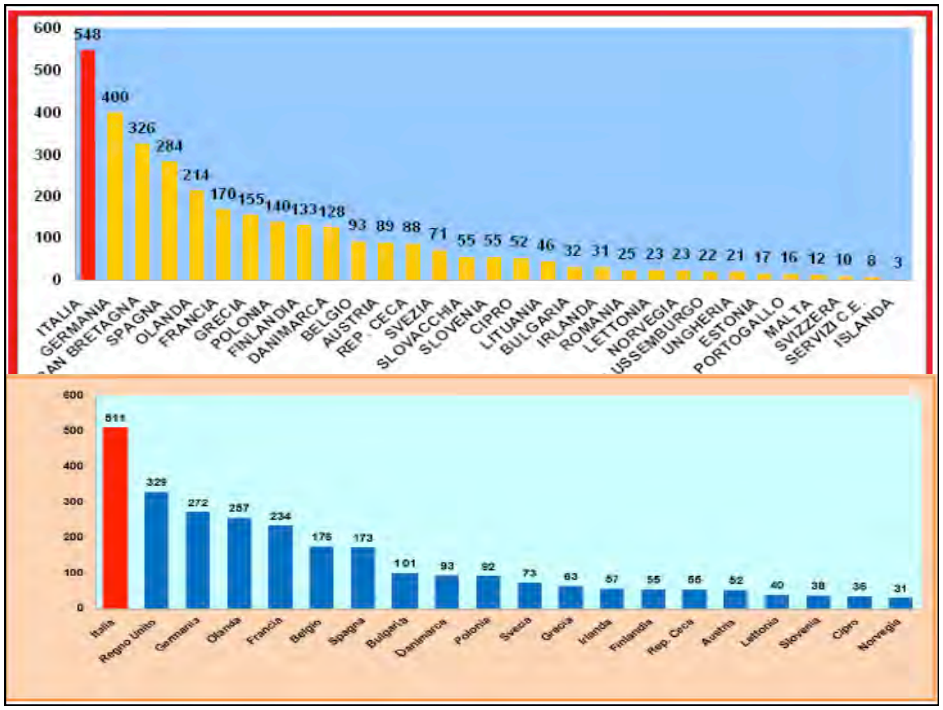


Figura 1

2. Numero delle notifiche trasmesse dai diversi Paesi

L'Italia è risultata essere il primo Paese Membro nel numero di segnalazioni inviate alla Commissione europea, dimostrando, come negli anni passati, una intensa attività di controllo sul territorio nazionale, con un totale di 511 notifiche (pari al 17.2%). Dopo l'Italia vi è il Regno Unito (329), la Germania (272), seguita dall'Olanda, Francia, Belgio e Spagna (Figura 5).

Figura 5



3. Numero delle notifiche effettuate dall'Italia

Nell'attività di controllo svolta in ambito nazionale, sono pervenute 131 segnalazioni da parte degli Assessorati alla Sanità, ASL e 6 dal Comando Carabinieri per la tutela della Salute (Figura 6). Lo scorso anno sono state 137. Gli Uffici periferici del Ministero della Salute (USMAF, UVAC e PIF) hanno, invece, notificato 374 irregolarità (369 nel 2014).

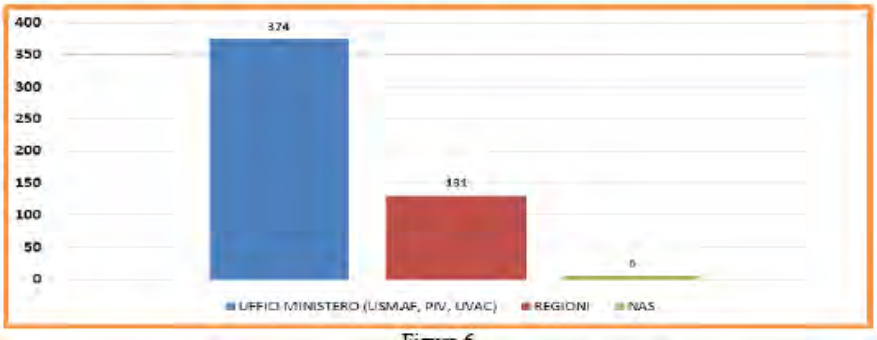


Figura 6

4. Numero di notifiche di allerta riguardanti l'origine dei prodotti

Per quanto riguarda l'origine, i prodotti nazionali risultati irregolari sono stati 115 (89 nel 2014). Pertanto, l'Italia risulta il quinto Paese europeo per numero di notifiche ricevute. Nell'anno 2014 l'Italia era risultata il sesto Paese.
Considerando, invece, anche i Paesi Terzi, l'Italia risulta ottava.
Lo Stato che ha ricevuto il maggior numero di notifiche per prodotti non regolari è la Cina, seguita dalla Turchia e dall'India (Figura 7).

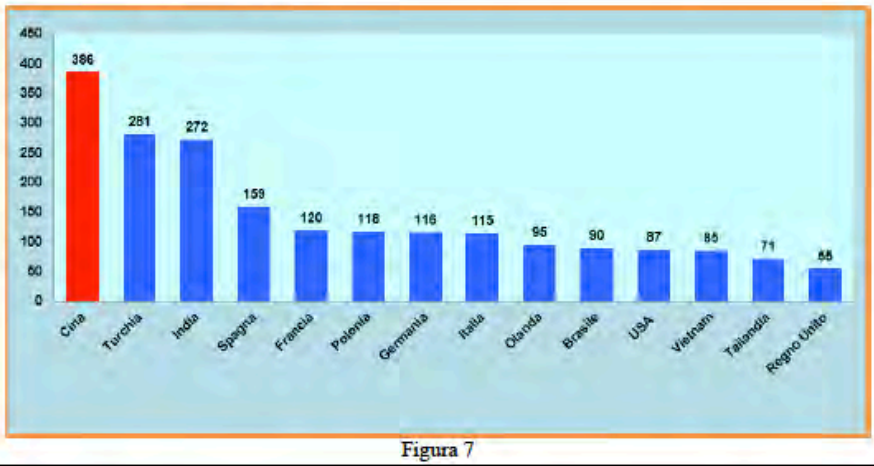


Figura 7

5. Notifiche di allerta riguardanti i prodotti nazionali

Per quanto concerne le 115 notifiche riguardanti i prodotti nazionali, si precisa che 62 segnalazioni sono state trasmesse da altri Stati Membri, mentre le restanti sono pervenute attraverso la vigilanza nazionale, trattandosi di prodotti ridistribuiti in ambito europeo o extra europeo.
La tipologia dei prodotti irregolari è eterogenea. Il maggior numero di notifiche ha riguardato i prodotti della pesca, seguiti dall'alimentazione animale e da frutta e vegetali (Figura 8).

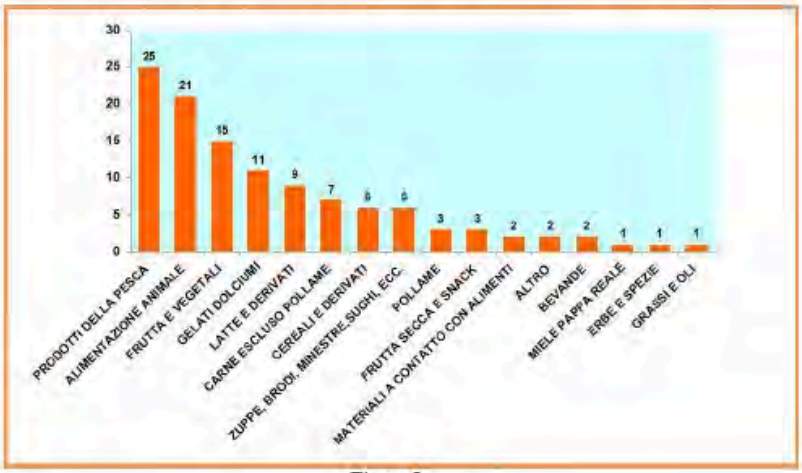


Figura 8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E. ROMAGNA
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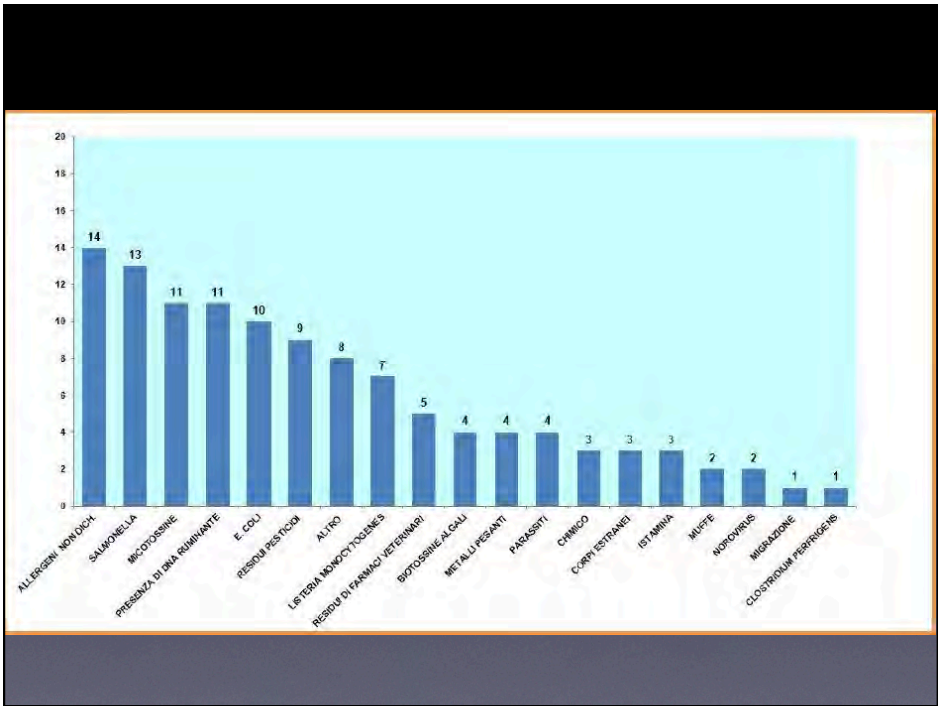
LAZIO
LIGURIA

Figura 9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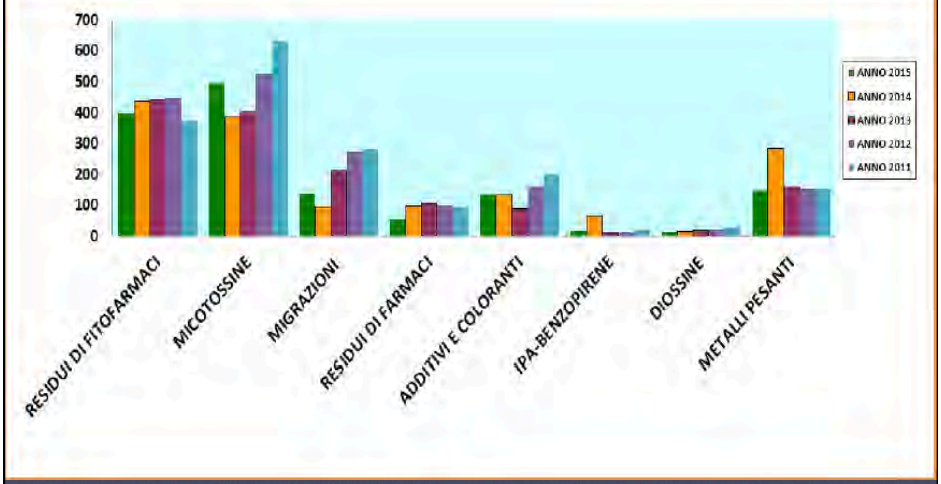
ALLERGENI NON DICH.
SALMONELLA
MICOTOSSINE
PRESENZA DI DNA RUMINANTE
E. COLI
RESIDUI PESTICIDI
ALTRO
LISTERIA MONOCITOGENES
RESIDUI DI FARMACI VETERINARI
BIOTOSSINE ALGALI
METALLI PESANTI
PARASSITI
CHIMICO
CORPI ESTRANEI
ISTAMINA
MUFFE
NOROVIRUS
MIGRAZIONE
CLOSTRIDIUM PERFRINGENS



CONTAMINANTE	NOTIFICHE
Bacillo Cereus	3 ↑
Biotossine Algali	4
Muffe	9
Enterobatteriacee	5
E. Coli	9
ISTAMINA (casi di Istaminosi)	12 ↑
Listeria	28 ↑
Larve di Anisakis	41 ↑
Norovirus	1
Altri parassiti	44
Salmonelle	105 ↑

Search Results (119)

Per fortuna:

18 Mar 2016 Trichinellosis - France: ex Greenland bear meat
28 Feb 2016 Trichinellosis - Czech Republic: (LI) wild boar
06 Oct 2015 Trichinellosis - Argentina (04): (BA) dry sausage
09 May 2015 Trichinellosis - France: (Corsica) human, sausages
16 Feb 2015 Trichinellosis - Argentina (02): (BA) human, pork, comment
07 Feb 2015 Trichinellosis - Argentina: (BA) human, pork
31 Jan 2015 Zoonoses - EU: EFSA report, 2013
13 Dec 2014 Trichinellosis - Belgium (02): ex Spain, wild boar meat
06 Dec 2014 Trichinellosis - Belgium: ex Spain, wild boar meat, RFI
01 Aug 2014 Trichinellosis - Argentina: (CB) alert
26 Oct 2013 Trichinellosis - Canada (02): (QC) comment
26 Oct 2013 Trichinellosis - Canada: (QC)
18 May 2013 Trichinellosis - Argentina (02): (CB)
26 Apr 2013 Trichinellosis - Argentina: (NQ) wild boar meat
14 Apr 2013 Trichinellosis - Germany: wild boar meat
13 Feb 2013 Horsemeat - Europe (03): control, food safety, trichinosis
04 Jan 2013 Trichinellosis, human, wild boar - Italy

Human trichinellosis after consumption of wild boar

Media are describing an outbreak of trichinellosis due to the consumption of wild boar sausages among hunters and their relatives and friends.

No official data nor more detailed info seem to be available. Hunted wild boar meat (basically lung, liver, heart and a piece of muscle) should be brought to the local slaughterhouse for post mortem inspection and for sampling for detection of Trichinella ssp. larvae.

In EU and at EFSA (European Food Safety Authority) there is an ongoing confrontation on the so-called revision and simplification of meat inspection methods. As an EFSA expert I have personally been involved in this exercise since 2004 and I believe that this outbreak proves once again that post mortem inspection and sampling at the slaughterhouse are still of the utmost importance to protect human health.

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expert for EFSA - panel ERWG
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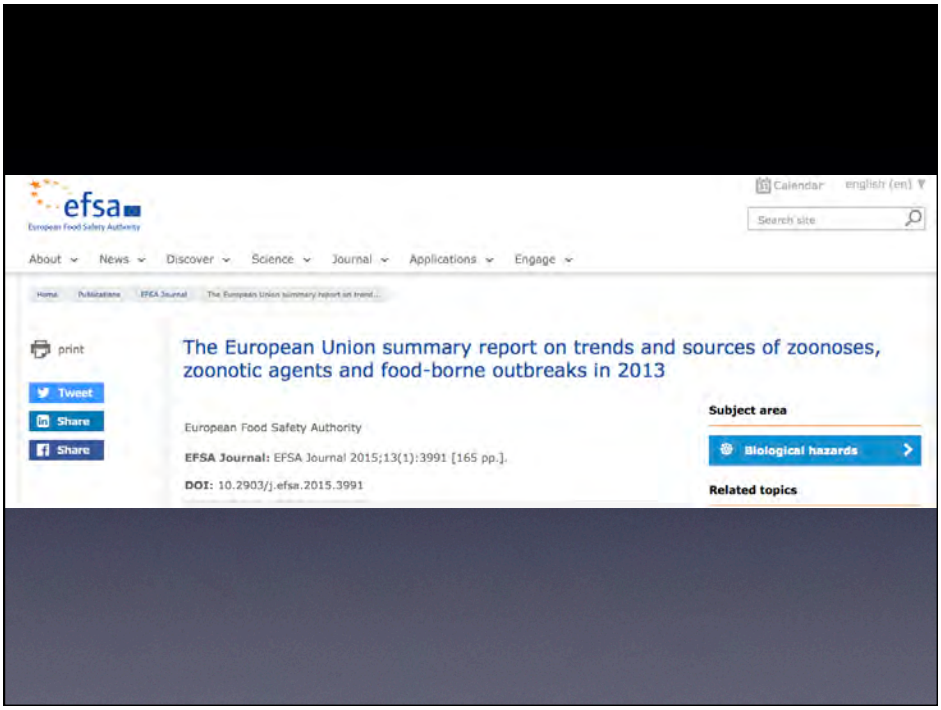
[ProMED thanks professor Beniamino Cenci Goga for sending us this information and translating the text from Italian. The cases underline that Trichinella are found in wild boars in Europe. Most Trichinella infection in Europe are due to imported food from outside the EU and some of these outbreaks has been reported by ProMED (see below). The outbreak reported from Poland in 2003 was also due to consumption of local boar. - Mod.EP

A HealthMap/ProMED-mail map can be accessed at: http://healthmap.org/r/1BIF.]



Esempio di calcolo di rischio relativo

- Tra i parametri di frequenza delle malattie la misura appropriata in caso di malattie alimentari è il **rischio relativo**. Il rischio relativo (RR) esprime il rischio nel gruppo dei soggetti esposti in rapporto al rischio nei soggetti non esposti.

- **Il tasso di attacco** è, invece, un caso particolare di incidenza. Si calcola come D/(D+N), dove D è il numero di casi nel lasso di tempo considerato e N i soggetti a rischio.

	Ammalati	Sani	Totale
Esposti	a	b	(a+b)
Non esposti	c	d	(c+d)
Totale	(a+c)	(b+d)	t

rischio relativo:

tasso di attacco tra le persone che hanno consumato l'alimento

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tasso di attacco tra le persone a che NON hanno consumato l'alimento

n. di persone **ammalate** che **hanno mangiato** l'alimento/n. **totale** di persone che **hanno mangiato** l'alimento

---

n. di persone **ammalate** che **non hanno mangiato** l'alimento/n. **totale** di persone che **non ha mangiato** l'alimento

ossia: a/(a+b) / c/(c+d)

	Ammalati	Sani	Totale
Esposti	a	b	(a+b)
Non esposti	c	d	(c+d)
Totale	(a+c)	(b+d)	t

Un RR **di 1,0** significa che il rischio è **simile** nel gruppo degli esposti e dei non esposti e non è associato alla malattia.

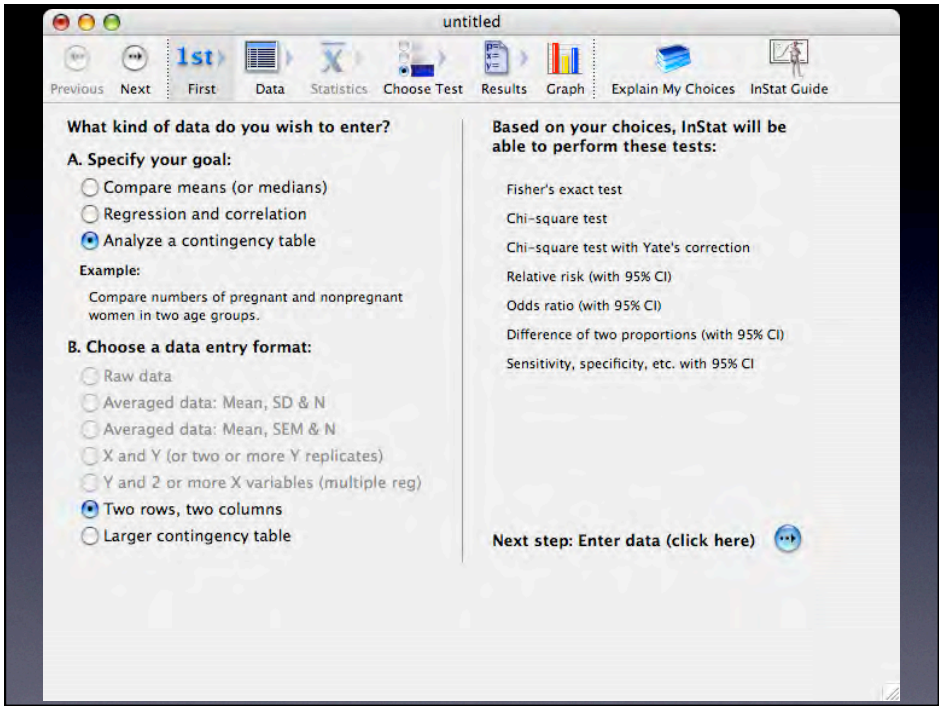
Un RR **maggiore di 1,0** significa che il rischio è **maggiore** nel gruppo esposto e che l'esposizione può esere un fattore di rischio per la malattia.

Un RR **minore di 1,0** significa che il rischio è **inferiore** nel gruppo esposto e che l'esposizione potrebbe essere un fattore di protezione.

- Il calcolo del chi-square (*X* quadrato) o del Fisher exact test serve invece a determinare la probabilità che il RR osservato potrebbe essersi verificato casualmente, nel caso la malattia non fosse collegata all'esposizione. Questa probabilità è il valore *p* (p-value). Un *p-value* molto piccolo significa che sarebbe estremamente improbabile una simile osservazione in assenza di reale collegamento tra esposizione e malattia. Se il *p-value* è minore di alcuni valori soglia predeterminati (di solito 0,05 ovvero una probabilità di 5 su 100) l'associazione tra esposizione e malattia si dice "statisticamente significativa".

Per il calcolo del c quadrato far riferimento alla formula generale:

$X^2 = \Sigma$ (frequenze osservate – frequenze attese)^2/frequenza attesa = Σ (O-E)^2/E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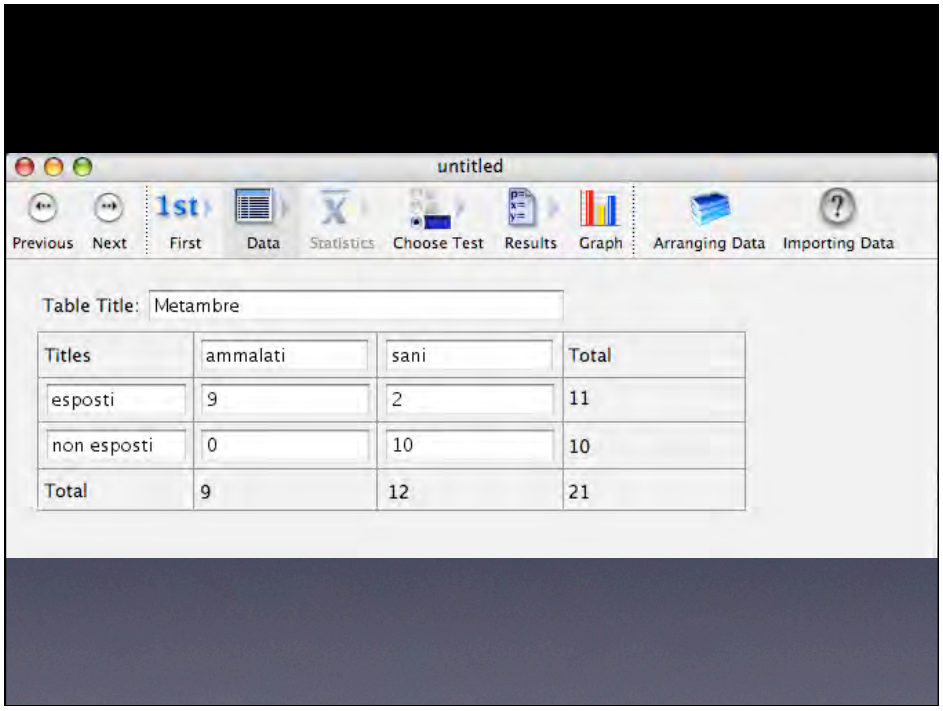
InStat Guide
What kind of data do you wish to enter?
A. Specify your goal:
Compare means (or medians)
Regression and correlation
Analyze a contingency table
Example:
Compare numbers of pregnant and nonpregnant women in two age groups.
B. Choose a data entry format:
Raw data
Averaged data: Mean, SD & N
Averaged data: Mean, SEM & N
X and Y (or two or more Y replicates)
Y and 2 or more X variables (multiple reg)
Two rows, two columns
Larger contingency table
Based on your choices, InStat will be able to perform these tests:
Fisher's exact test
Chi-square test
Chi-square test with Yate's correction
Relative risk (with 95% CI)
Odds ratio (with 95% CI)
Difference of two proportions (with 95% CI)
Sensitivity, specificity, etc. with 95% CI
Next step: Enter data (click here)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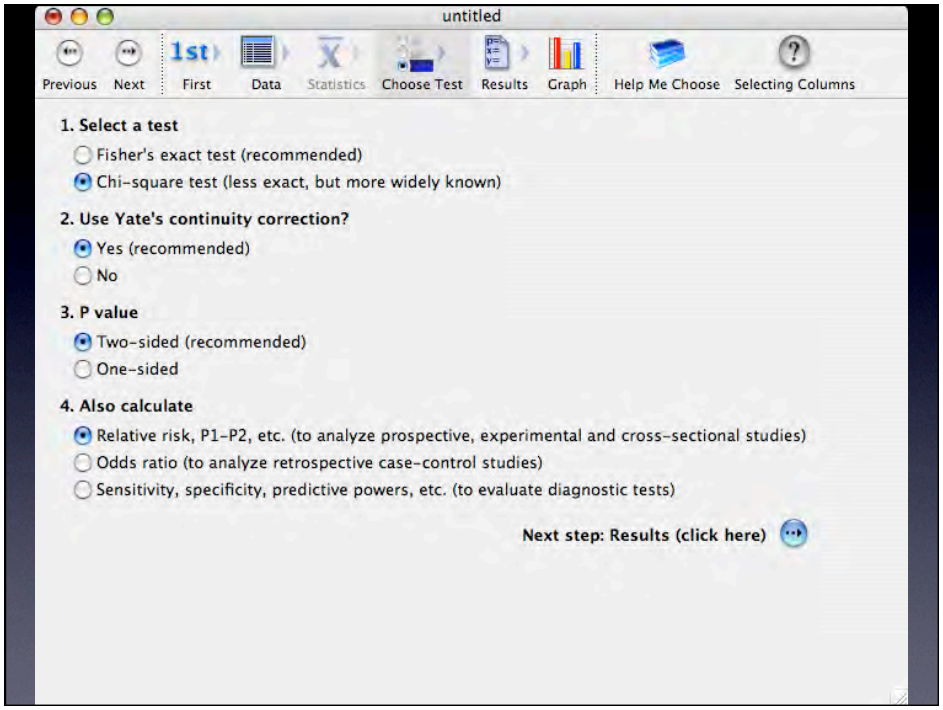
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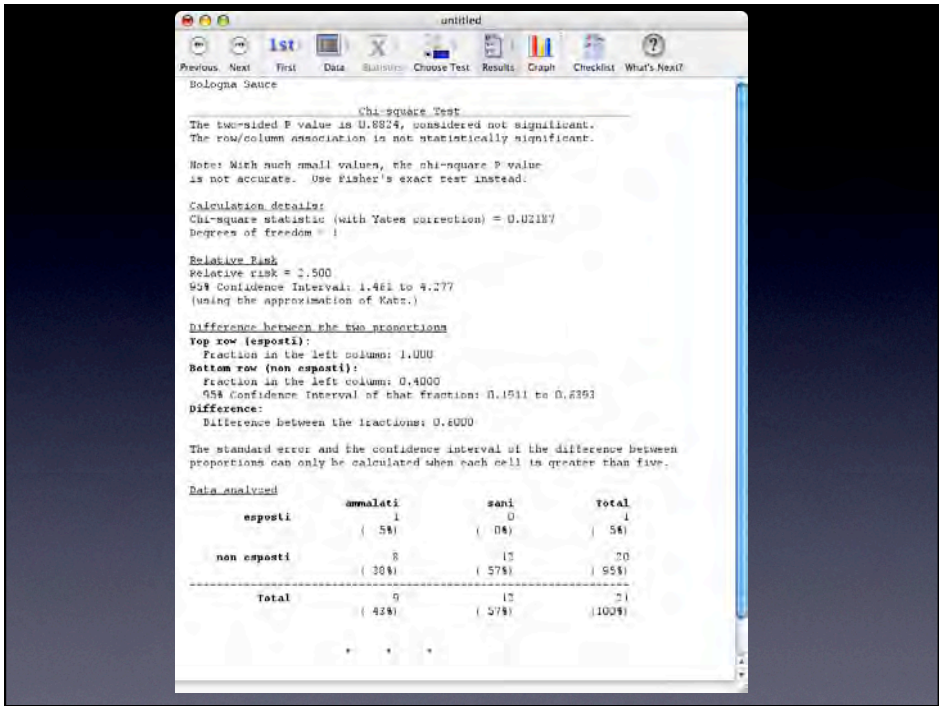
1. Select a test
Fisher's exact test (recommended)
Chi-square test (less exact, but more widely known)
2. Use Yate's continuity correction?
Yes (recommended)
No
3. P value
Two-sided (recommended)
One-sided
4. Also calculate
Relative risk, P1-P2, etc. (to analyze prospective, experimental and cross-sectional studies)
Odds ratio (to analyze retrospective case-control studies)
Sensitivity, specificity, predictive powers, etc. (to evaluate diagnostic tests)
Next step: Results (click here)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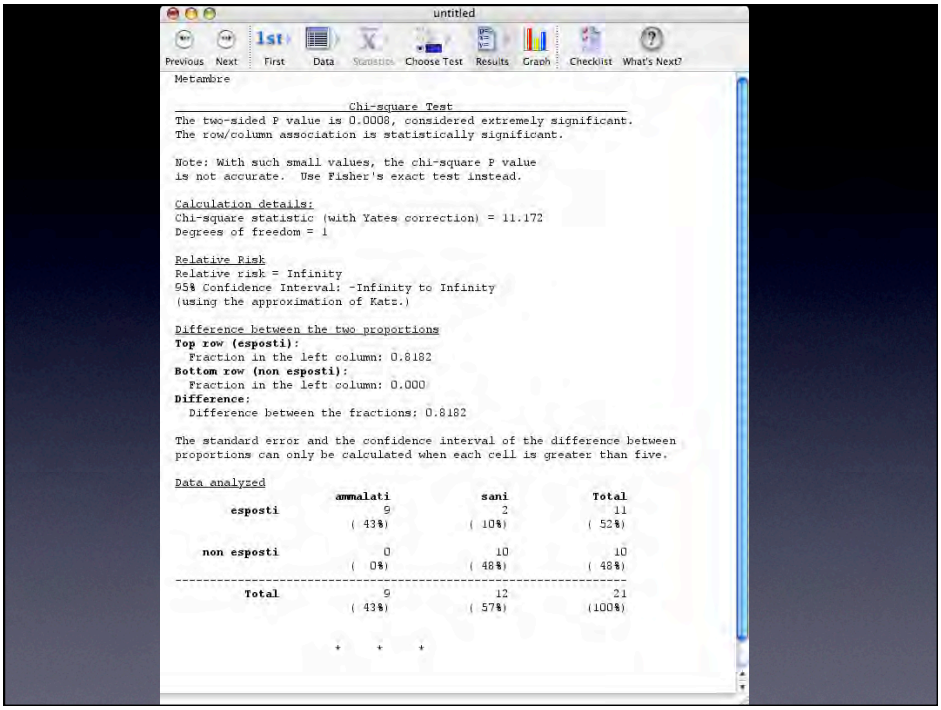
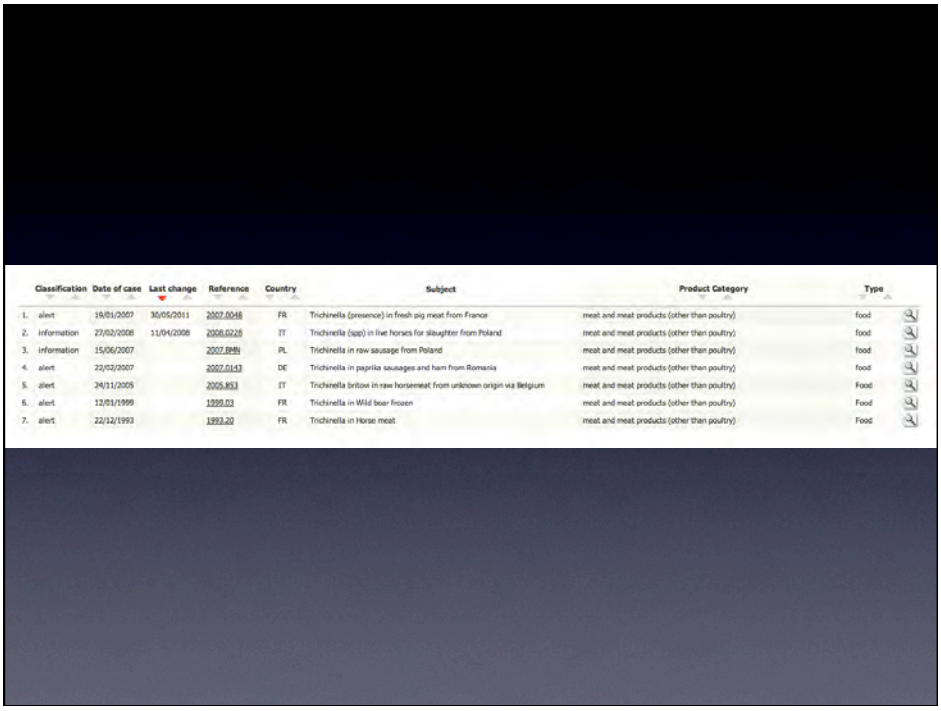
Bologna Sauce
Chi-square Test
The two-sided P value is 0.8824, considered not significant.
The row/column association is not statistically significant.
Note: With such small values, the chi-square P value
is not accurate. Use Fisher's exact test instead.
Calculation details:
Chi-square statistic (with Yates correction) = 0.021E7
Degrees of freedom = 1
Relative Risk
Relative risk = 2.500
95% Confidence Interval: 1.461 to 4.277
(using the approximation of Katz.)
Difference between the two proportions
Top row (esposti):
Fraction in the left column: 1.000
Bottom row (non esposti):
Fraction in the left column: 0.4000
95% Confidence Interval of that fraction: 0.1911 to 0.6393
Difference:
Difference between the fractions: 0.6000
The standard error and the confidence interval of the difference between
proportions can only be calculated when each cell is greater than five.
Data analyzed
ammalati sani total
esposti 1 0 1
(5%) (0%) (5%)
non esposti 8 12 20
(38%) (57%) (95%)
Total 9 12 21
(43%) (57%) (100%)



Trichinellosi

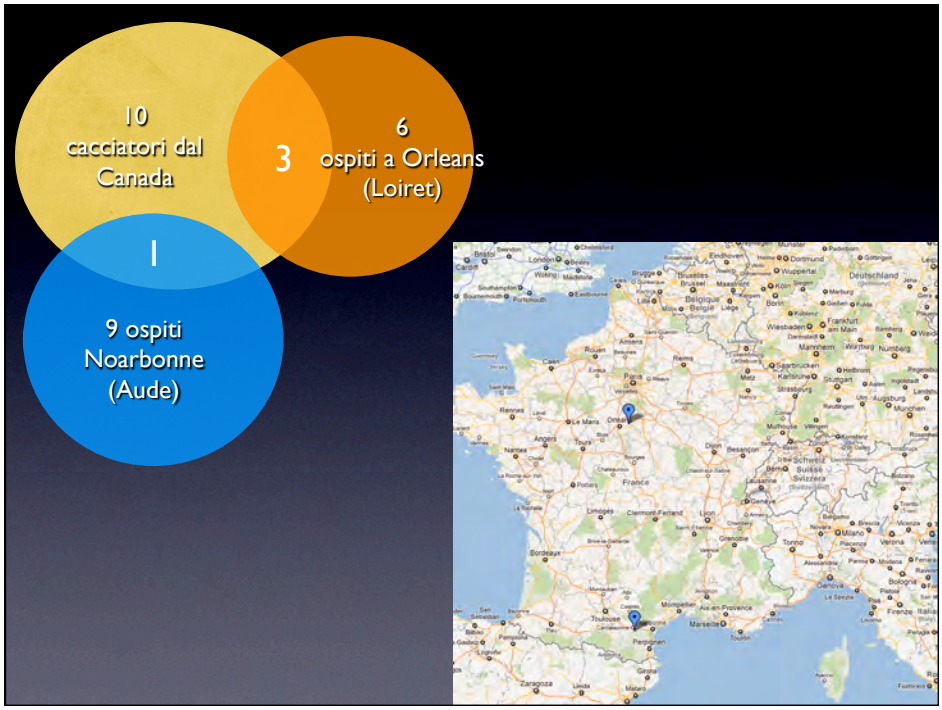
- Trichinella: suino, cinghiale, equino (per le specie di nostro interesse). Il caso conseguente al consumo di carne di orso in Francia.
- Adulto: nel tenue degli ospiti
- larve: nelle miofibre dei mm. striati --> ingestione di carni: stomaco

- T. spiralis
- T. nativa artico, orso e cavallo
- T. britovi zone temperate, cavallo e cinghiale
- T. pseudospiralis, Oceania, uccelli e onnivori
- T. nelsoni, tropici, facocero,



	Classification	Date of case	Last change	Reference	Country	Subject	Product Category	Type
1.	alert	19/01/2007	30/05/2011	2007.0048	FR	Trichinella (presence) in fresh pig meat from France	meat and meat products (other than poultry)	food
2.	information	27/02/2008	11/04/2008	2008.0226	IT	Trichinella (spp) in live horses for slaughter from Poland	meat and meat products (other than poultry)	food
3.	information	15/06/2007		2007.BMN	PL	Trichinella in raw sausage from Poland	meat and meat products (other than poultry)	food
4.	alert	22/02/2007		2007.0143	DE	Trichinella in paprika sausages and ham from Romania	meat and meat products (other than poultry)	food
5.	alert	24/11/2005		2005.853	IT	Trichinella britovi in raw horsemeat from unknown origin via Belgium	meat and meat products (other than poultry)	Food
6.	alert	12/01/1999		1999.03	FR	Trichinella in Wild boar frozen	meat and meat products (other than poultry)	Food
7.	alert	22/12/1993		1993.20	FR	Trichinella in Horse meat	meat and meat products (other than poultry)	Food

- 22 settembre 2005: 5 pazienti in Francia (Insitut de Veille Sanitaire) con febbre, mialgia, ipereosinofilia.
- Pasto 15 gg prima con carne di orso portata da un cacciatore dal Canada (Quebec), alcuni in Francia.
- Tutti rintracciati: test di laboratorio e terapia
- 3 gruppi:



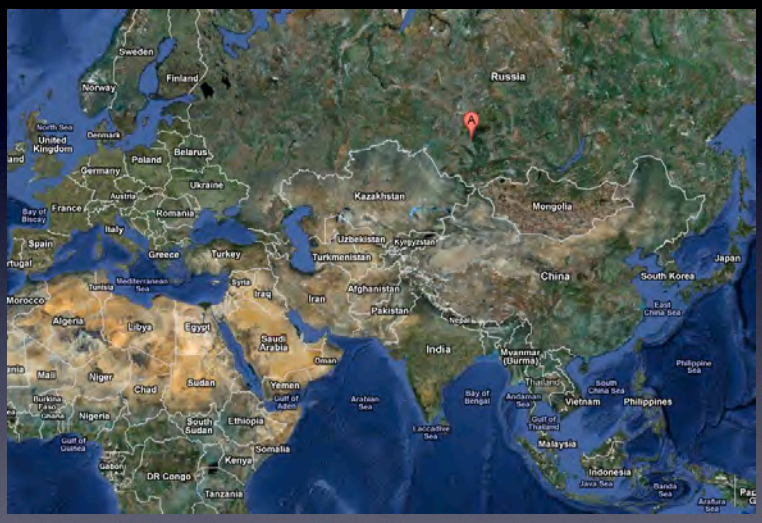
- Ottobre 2005: 17 casi di trichinellosi (da 31 a 67 anni, 13 uomini e 4 donne)
- Incubazione da 7 a 24 gg (media 18)
- 2 Biopsie da un paziente: 2 larve per grammo di muscolo
- Ospedalizzzione per 10 giorni
- diagnosi: T. nativa
- terapia: albendazolo (400-800 mg/die dal 20°-28° giorni dopo l'esposizione)

- Orso abbattuto il 26 agosto 2005 nel Quebec del nord (tundra vicino al fiume George)

- Scuoiato, eviscerato e sezionato sul posto
- Carni e visceri tra cui la lingua portati al campo
- Carcassa lasciata frollare
- Carni consumate tra il 28 e il 30 agosto 2005, anche poco cote o crude
- Tutti i cacciatori rientrano in Francia il 2 settembre, due riportano, nonostante i divieti, la carne nei bagagli

- Indagine del ministero del'agricoltura

- Caso più recente in Russia (Kemerovo), ottobre 2009



Il caso più recente: Marzo 2016 – Orso – Francia dalla Groenlandia

[On 11 Mar 2016] a 55-year-old patient presented to the Parasitology Clinical Service of Cochin Hospital in Paris complaining of high fever and muscular pain that he had been suffering from since [4 Mar 2016].

He was part of a group of 3 French people having recently travelled in East Greenland. Between [13 and 16 Feb 2016] they each had consumed around 200 g of polar bear (_Ursus maritimus_) meat. The polar bear meat had been cut into 1 cm thick slices and then fried for several minutes, but was still pink when eaten.

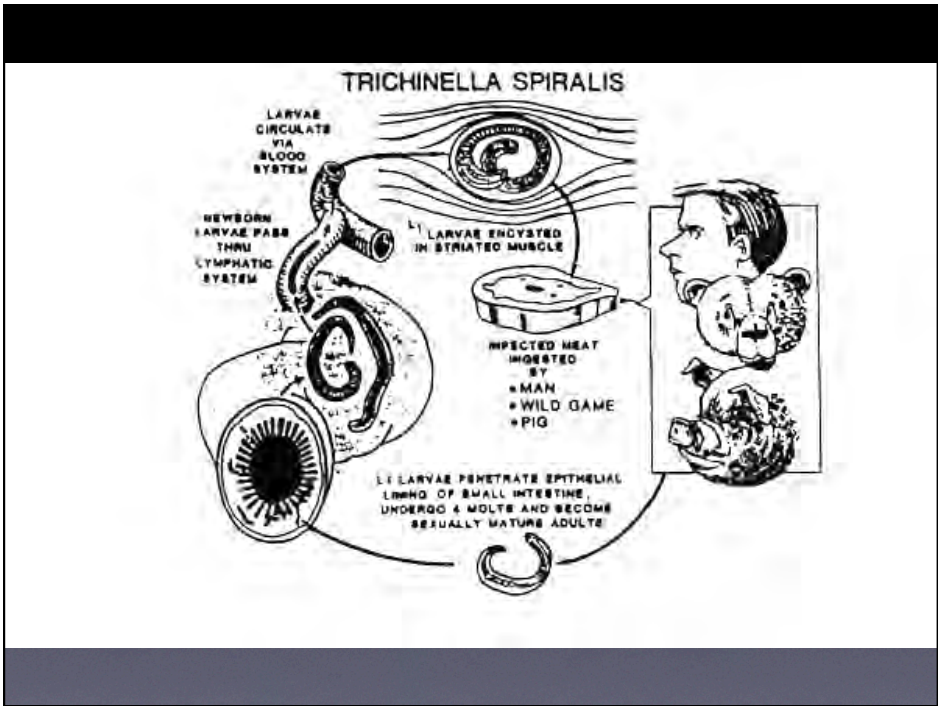
One of the consumers, aged 56, was totally asymptomatic besides one day of pronounced diarrhea at the beginning of March. On [9 Mar 2016] the last consumer, aged 59, developed fever, myalgia and a slight facial edema and one day of diarrhea. Blood tests were performed on all the patients and showed both elevated muscle enzyme and eosinophile levels.

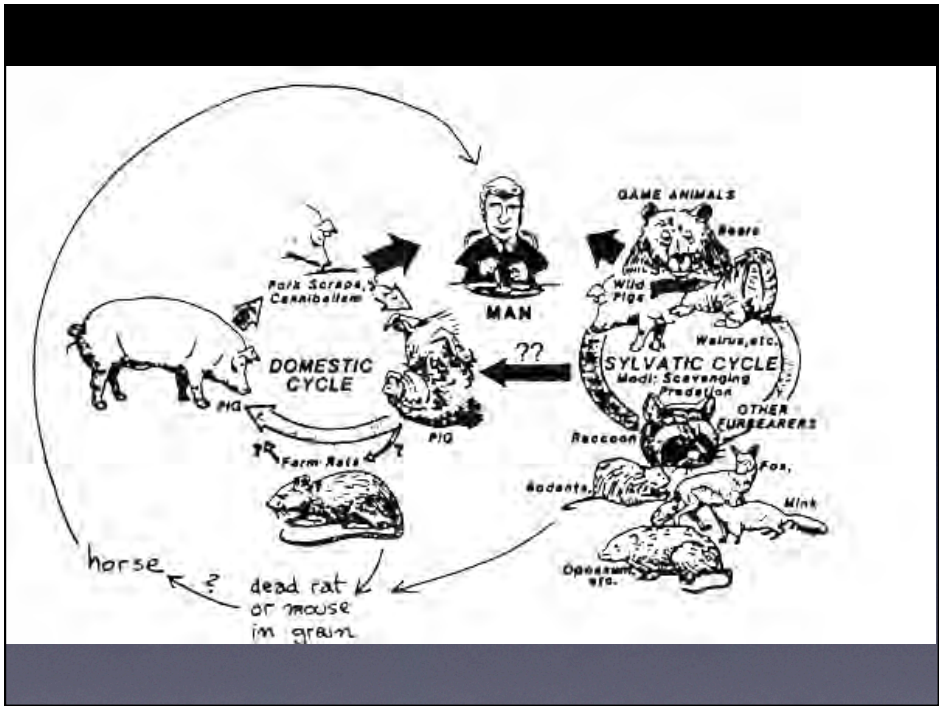
Antibody testing for _Trichinella_ was positive by ELISA and western blot for the 3 patients (LDBio Diagnostics, France) and they were prescribed albendazole for 10-days. The polar bear, weighing around 400 kg, was shot by a local accredited Inuit hunter in the Scorebysund region on the East coast of Greenland (figure 1 and 2).

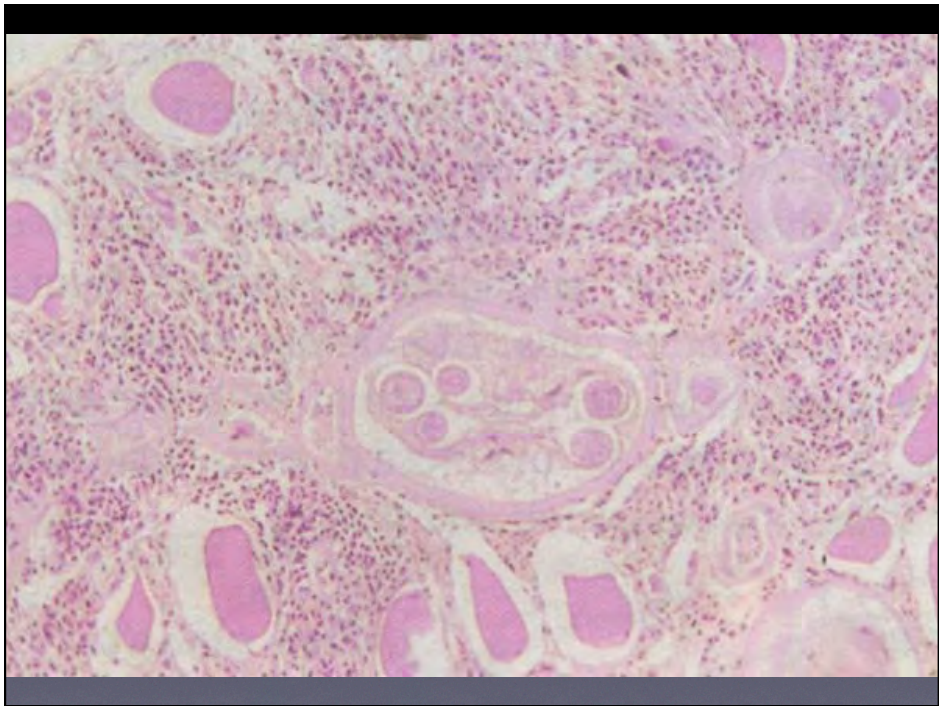
Only the 3 French travellers ate under-cooked meat, whereas local people ate the meat boiled and have been informed that the polar bear was infected with _Trichinella_. None of the meat was imported to France. Trichinellosis is well known in Greenland, where large human outbreaks were reported during the 40s and the 50s, but since then only sporadic human cases have been documented (Møller, 2007). In Ammassalik, 800 km [about 500 miles] south of Scoresbysund, high seroprevalences (around 20 percent) of trichinellosis were found in humans (Møller, 2007).

In this specific region Kapel et al (1995) found a 35 percent prevalence of trichinellosis in arctic fox (_Alopex lagopus_) and mentioned 32 to 41 percent prevalence of trichinellosis in polar bears. Bear meat is a frequent source of trichinellosis in French people travelling in the Arctic, as 31 cases (including these 3 cases) have been reported in France since 1995. Two cases were described in 1996 in 2 aircraft pilots who stopped for a few hours in Greenland and ate polar bear steaks (Nozais et al, 1996). We reported one case in 2004 and 17 cases in 2005 after consumption of black bear (_Ursus americanus_) meat hunted in the George River region in North Quebec (Ancelle et al, 2005). We also reported 8 cases in crews of 2 boats sailing through the NW passage and who had eaten grizzly bear (_Ursus arctos_) meat in Cambridge Bay, Nunavut (Houzé et al, 2009). Travellers in these regions have to be warned of the risk of eating raw meats such as bear or walrus meat that can be source of trichinellosis; a parasitose that can be severe and complicated by potentially lethal myocarditis or encephalitis.

- esame trichinoscopico:
- d.d. con:
  - sarcocisti regredite
  - cisticerchi calcificati
  - granuli di tirosina nei prosciutti




GAME ANIMALS
Bears
Wild Pigs
Walrus, etc.
MAN
Pork Scraps, Cannibalism
??
DOMESTIC CYCLE
SYLVATIC CYCLE
Mod: Scavenging Predation
OTHER FURBEARERS
Raccoon
Fox,
Mink
Rodents
Opossum etc.
Farm Rats
horse
?
dead rat or mouse in grain



Giudizio sanitario

- esame trichinoscopico obbligatorio
- art. 9, punto 2b: non idoneità
- art. 10, punto 1a: se non sottoposte all'esame trichinoscopico --> trattamento con il freddo (-25°C per 240 ore, 480 se spessore > 25 cm)
- art. 10, punto 2 concede deroghe: se assenza in base a dati epidemiologici e monitoraggio su animali vivi e abbattuti.

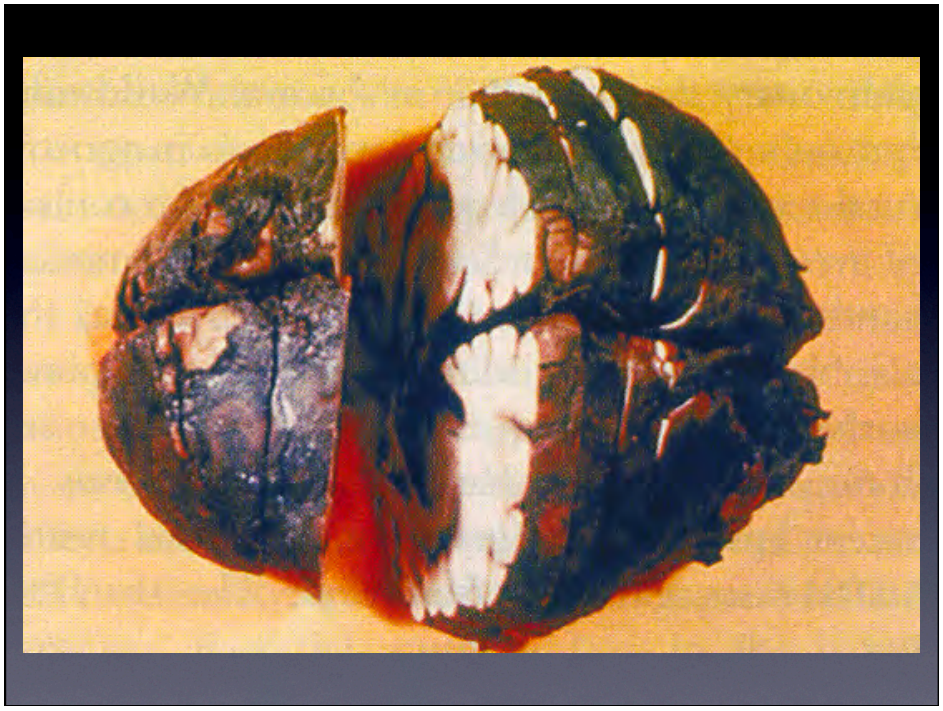
Trichinella free regions

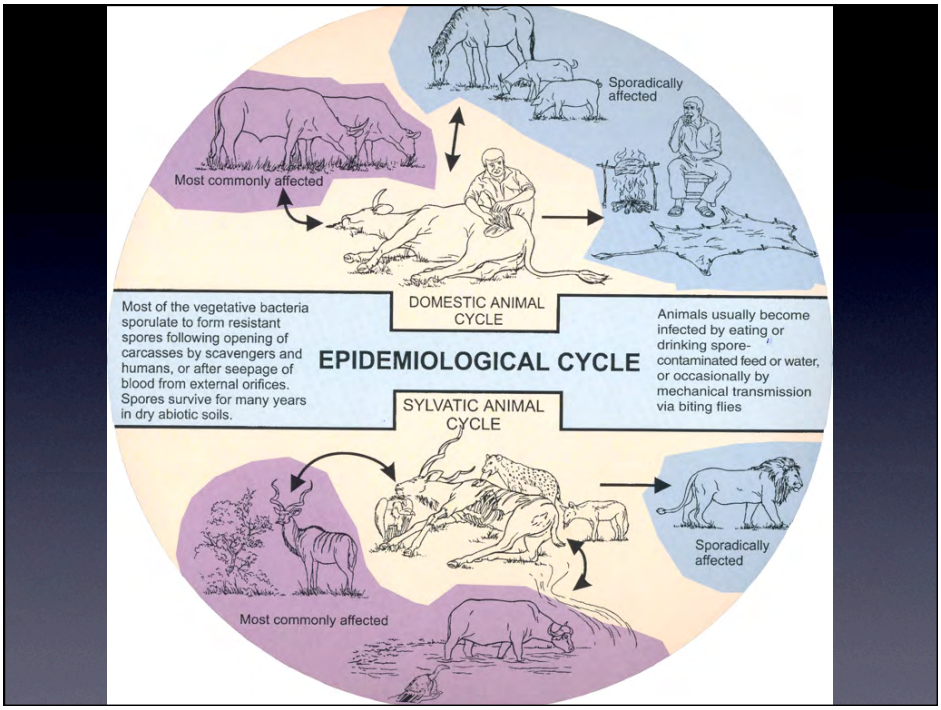
- controllo roditori
- prevenzione cannibalismo
- monitoraggio con test sierologici
- da 25 anni nessun caso nei suini e nell'uomo
- da 5 anni nessun caso nei selvatici e nelle volpi

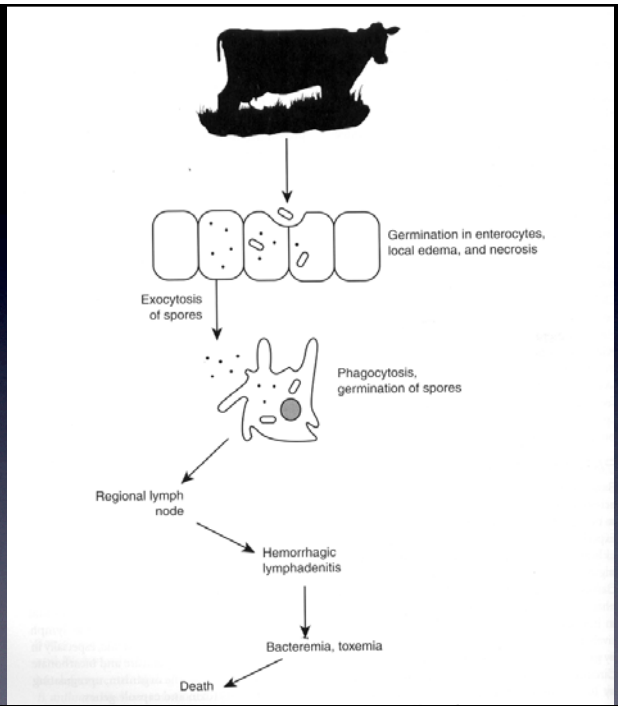
Carbonchio ematico

- Malattia infettiva a carattere setticemico: *Bacillus anthracis*.
- Animali più recettivi: ruminanti, equini, suini.
- I ruminanti si infettano per via digerente, l'uomo per via cutanea (pustola maligna), ma anche per via respiratoria (malattia dei cardatori) con polmonite siero-fibrinosa emorragica-necrotica e per via digerente (consumo di carni contaminate)

19 May 2016 Undiagnosed illness, death, human - Congo: (NK) beef susp., RFI
18 May 2016 Anthrax - Bangladesh (03): (RS) human, bovine, more cases
17 May 2016 Anthrax - Bangladesh (02): (RS) human, bovine, more cases
14 May 2016 Anthrax - India (15): (OR) elephant, susp
14 May 2016 Anthrax - Bangladesh: (RS) human, bovine
11 May 2016 Anthrax - Kenya (02): (MU) human, bovine
10 May 2016 Anthrax - USA (02): (TX) bovine
09 May 2016 Anthrax - India (14): (OR)
09 May 2016 Anthrax - India (13): (AP) human, bovine, outbreak conf
05 May 2016 Anthrax - India (12): (AP) human, bovine, patients self-discharge
04 May 2016 Anthrax - India (11): (AP) human, bovine, new cases
04 May 2016 Anthrax - Kenya: foiled anthrax attack, susp ISIS
29 Apr 2016 Anthrax - India (10): (AP) human, bovine, NOT
28 Apr 2016 Anthrax - India (09): (AP) human, bovine
25 Apr 2016 Anthrax, human, livestock, 2015 - Argentina

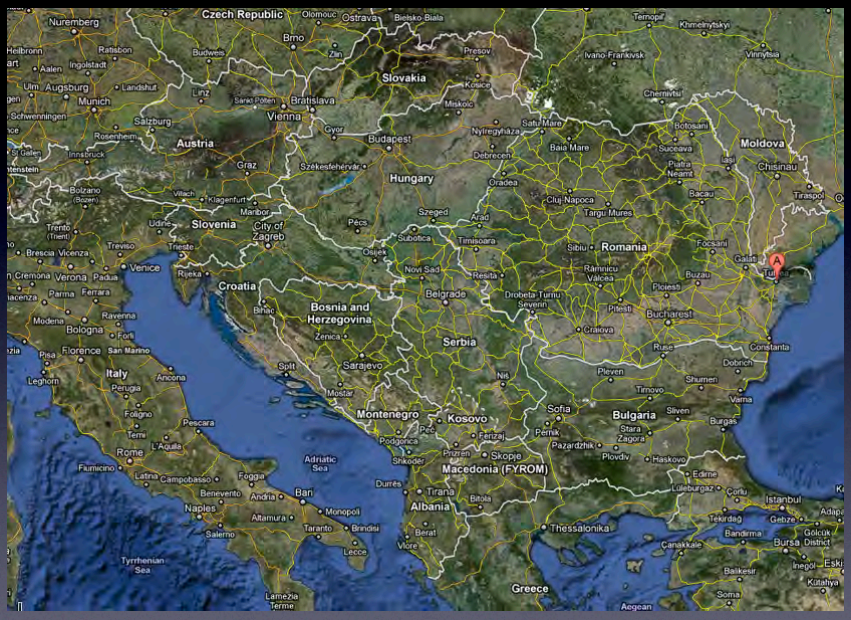



Sporadically affected
Most commonly affected
DOMESTIC ANIMAL CYCLE
Most of the vegetative bacteria sporulate to form resistant spores following opening of carcasses by scavengers and humans, or after seepage of blood from external orifices. Spores survive for many years in dry abiotic soils.
EPIDEMIOLOGICAL CYCLE
Animals usually become infected by eating or drinking spore-contaminated feed or water, or occasionally by mechanical transmission via biting flies
SYLVATIC ANIMAL CYCLE
Sporadically affected
Most commonly affected


Germination in enterocytes, local edema, and necrosis
Exocytosis of spores
Phagocytosis, germination of spores
Regional lymph node
Hemorrhagic lymphadenitis
Bacteremia, toxemia
Death

- negli animali: via aerogena, origine idrica (esempio della Basilicata e dell'Umbria)
- Ipertermia (fino a 42°C), tachicardia, tachipnea, mucose cianotiche, diarrea, edemi sottocutanei, emorragie.
- Nel cadavere c'è assenza di rigor mortis.

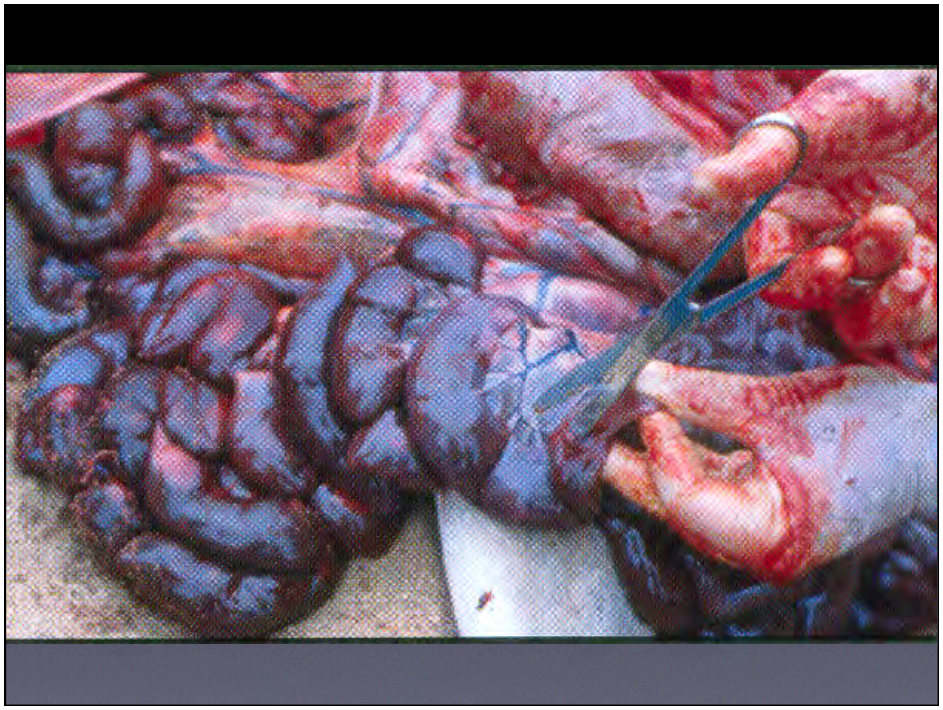
- Romania, ottobre 2011
- un caso cutaneo e uno con meningoencefalite
- caso 1: ragazzo 20 anni: febbre, brividi, malessere, pustole, pressione 65/40, poi meningite, arresto respiratorio, decesso nonostante terapia con cipro, penicillina, dopamina e respirazione assistita. Shock settico e arresto cardio-circolatorio
- caso 2: solo pustole, guarigione

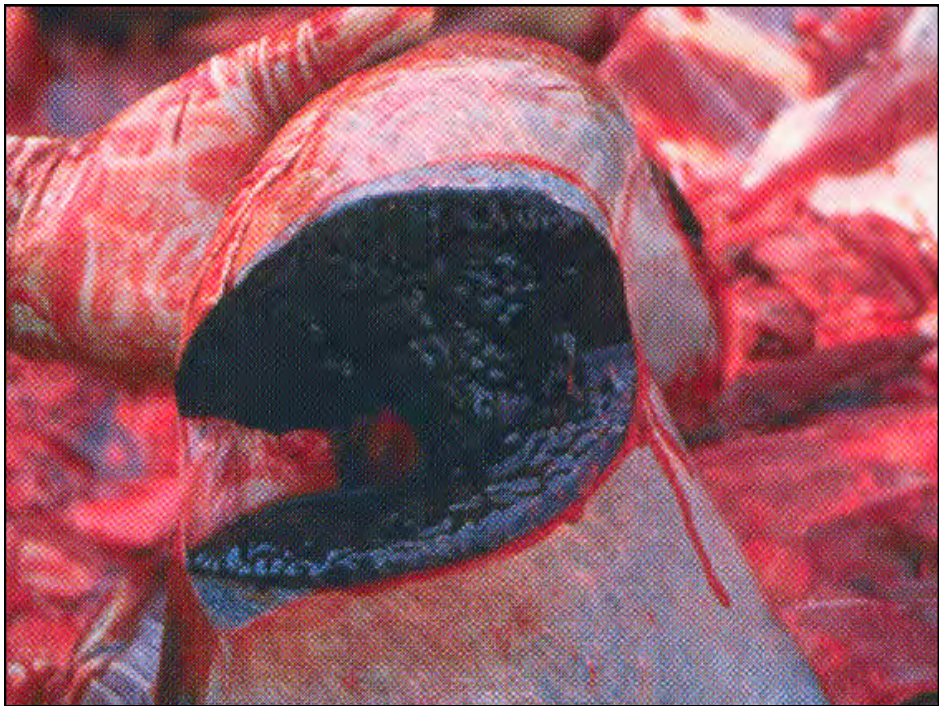


- La causa: vacca infetta macellazione domestica.
- 9 persone esposte. Caso 1 macellaio, caso due solo consumo

- Italia, estate 2011
- Basilicata e Campania
- 60 animali, frequenti lesione edematose, germe diffuso dai tabanidi

- NECROSCOPIA sconsigliata. Ma, se effettuata in idonee condizioni: setticemia, sangue scuro non coagulato, splenomegalia (**splenite acuta congestizia emorragica**: la c.d. milza carbonchiosa), infiltrazioni edematoso emorragiche sottocutanee, muscolari, enterite necrotico-ulcerativa emorragica (antrace intestinale), etc...
- Diagnosi differenziale: gangrene gassose, timpanismo acuto, folgorazione, colpo di calore, peste suina, splenomegalia in anaplasmosi - babesiosi e leucosi (in questi casi la milza è dura).





Caso più recente nell'uomo: Turchia, dicembre 2015

Human Cutaneous Anthrax, the East Anatolian Region of Turkey 2008-2014. Parlak E, Parlak M. Department of Infectious Diseases and Clinical Microbiology, Ataturk University Faculty of Medicine, Erzurum, Turkey.

Abstract

Anthrax is a zoonotic infectious disease caused by _Bacillus anthracis_. While anthrax is rare in developed countries, it is endemic in Turkey. The names of the different forms of the disease refer to the manner of entry of the spores into the body: cutaneous, gastrointestinal, inhalation, and injection. The purpose of this study was to evaluate the clinical characteristics, epidemiological history, treatment, and outcomes of patients with [cutaneous] anthrax.

82 cases of anthrax hospitalized at Ataturk University Faculty of Medicine, Department of Infectious Diseases and Clinical Microbiology in 2008-2014 were examined retrospectively. Gender, age, occupation, year, history, clinical characteristics, character of lesions, length of hospitalization, and outcomes were recorded. 30 (36.6 percent) patients were female, and 52 (63.4 percent) patients were male; ages were 18-69 and mean age was 43.77 13.05. The mean incubation period was 4.79 plus/minus 3.76 days. Cases were largely identified in August (41.5 percent) and September (25.6 percent). 69 (84.1 percent) of the 82 patients had been given antibiotics before presentation. Lesions were most common on the fingers and arms. The most common occupational groups were housewives (36.6 percent) and people working in animal husbandry (31.7 percent).

All patients had histories of contact with diseased animals and animal products. Penicillin-group antibiotics (78 percent) were most commonly used in treatment. One patient (1.2 percent) died from anthrax meningitis. The mean length of hospitalization was 8.30 plus/minus 5.36 days.

Anthrax is an endemic disease of economic and social significance for the region. Effective public health control measures, risk group education, vaccination of animals, and decontamination procedures will reduce the number of cases.

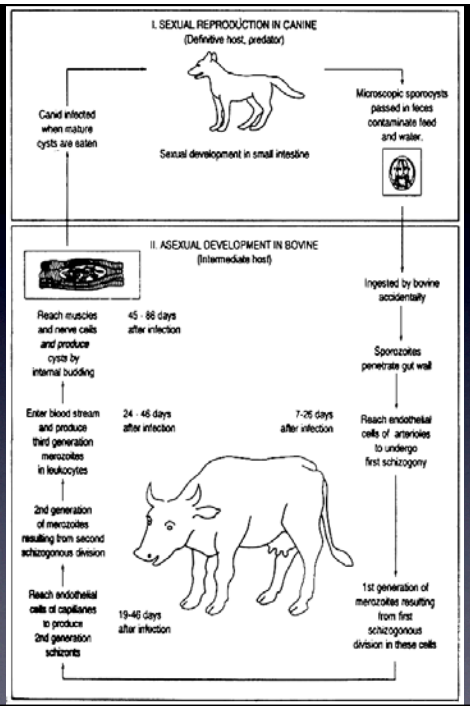
Sarcosporidiosi

- Sarcocystis: cisti nei muscoli

Species	Distribution	Definitive Host/s	Size of cyst	Pathogenicity
S. cruzi	World-wide	Dog, coyote, red fox, racoon and wolf	Microscopic, less than 0.5mm long.	Most pathogenic species in cattle it can cause fever, anaemia, abortion neurologic signs and even death.
S. hirsuta	Probably world-wide	Cat	Macroscopic, up to 8mm long and 1mm wide, fusiform in shape	Mildly pathogenic
S. hominis	Europe	Humans and some primates	Microscopic	Mildly pathogenic to cattle

Ciclo

- due ospiti ma serve un predatore (erbivoro e carnivoro o onnivoro): nel predatore c'è il ciclo sessuato (ospite definitivo), nella preda il ciclo asessuato (ospite intermedio).
- Due specie (S. hominis e S. suihominis) hanno l'uomo come ospite definitivo e sono zoonosi.
- Bovini si infettano con il cibo: riproduzione asessuata (schizogonia) --> cisti nei muscoli

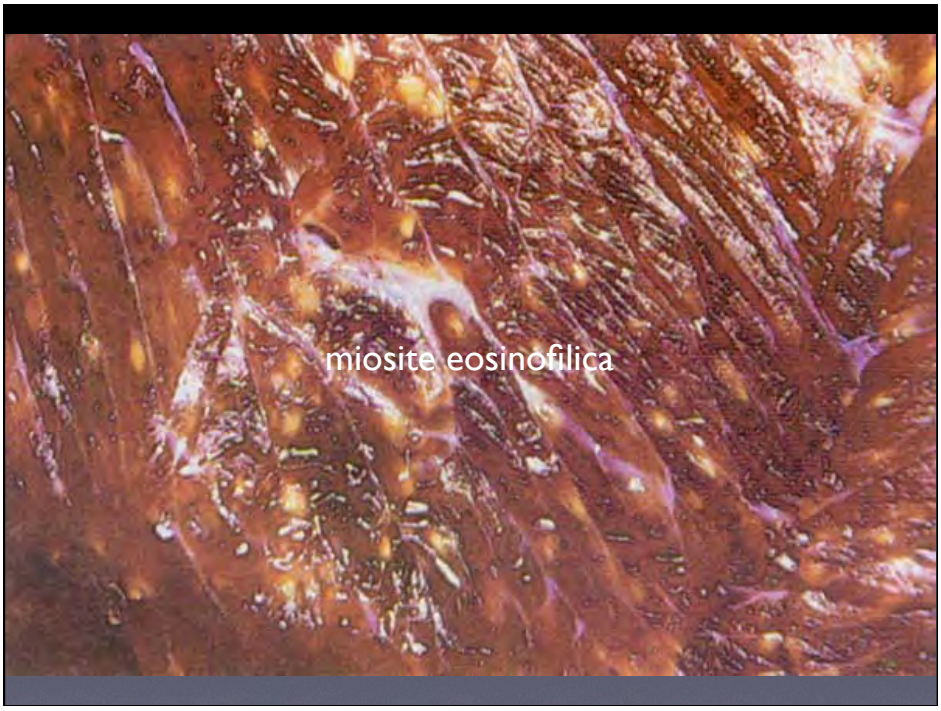


Rilievi ante mortem

- incubazione 5 - 11 settimane
- febbre
- anoressia
- salivazione
- anemia
- aborto
- perdita di peli (estremità della coda)

Rilievi post-mortem

- cisti microscopiche senza reazione tissitale
- a volte c'è miosite eosinofilica
- istologia: eosinofili e microcisti
- S. hirsuta: lesioni a fuso su esofago, diaframma, muscoli scheletrici di animali vecchi
- cisti macroscopiche



Destino al consumo

Reg. 854/2004 - All. I - Sez. II - Capo V

- nel caso di lesioni generalizzate e macroscopiche
- nel caso della miosite eosinofilica, indipendentemente dal rilievo di cisti, se il processo è esteso si distrugge tutta la carcassa

Destino al consumo

- art. 9, punto 2b: esclusione nel caso di lesioni generalizzate e macroscopiche
- nel caso della miosite eosinofilica, indipendentemente dal rilievo di cisti, se il processo è esteso si distrugge tutta la carcassa

Casi recenti: Malesia 2011-2015 - Turisti

21 Feb 2014 Sarcocystis, pinnipeds - Canada (03): (NS) comment
18 Feb 2014 Sarcocystis, pinnipeds - Canada (02): (NS) comment
17 Feb 2014 Sarcocystis, pinnipeds - Canada: (NS) gray seal
06 Jul 2013 Equine protozoal myeloencephalitis - USA: (MI)
09 Mar 2013 **Sarcocystosis - Malaysia: (Tioman Island) travel related, 2012**
21 Oct 2012 Sarcocystosis, human - Malaysia (03): new cases, travel related
26 Aug 2012 Sarcocystosis, human - Malaysia (02): (Tioman Island)
03 Feb 2012 Sarcocystis calchasi - USA: (MN) 2011, avian, 1st report
21 Jan 2012 Sarcocystosis, human - Malaysia (Tioman Island)
10 Dec 2011 Sarcocystosis, human - Malaysia (02): prevention
31 Oct 2011 Sarcocystosis, human - Malaysia: Tioman Island
26 May 2011 Polyparasitism, marine mammals - N America: (PNW) disease severity

Update on sarcocystis-like illness after visiting Tioman Island, Malaysia

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An outbreak of muscular sarcocystis-like illness has been evidenced since summer 2011 among travelers after visiting Tioman Island, Malaysia. As of November 2012, GeoSentinel working with TropNet, has been notified of 100 reported patients with suspected _Sarcocystis_ species [2].

Starting in summer 2011, 35 patients were identified by early 2012 and travelled there mostly during July and August 2011 [2, 6]. The epidemic is currently ongoing, with a 2nd wave of 65 reported new diseased travelers returning since summer 2012 [2]. A cluster of 12 patients returning from Peninsular Malaysia since late August 2012 were seen and followed in Bordeaux, France.

In the period of September-October 2012, 12 patients (7 male, 5 female; aged 11-46 years) were referred to the Division of tropical medicine, University Hospital Center, Bordeaux, France, with febrile myalgia, unexplained blood eosinophilia, elevated CPK levels, and negative trichinellosis serology.

Cases spent their vacation from 26 Jul to 25 Aug 2012 on the east coast of peninsular Malaysia. All patients belonged to a tourist group from southwestern France. The group was composed of 4 families. Of note, the 3 members of one family did not participate in the optional 4-day trip on Tioman Island and were instead moving on the neighboring Perhentian place. Almost all patients presented high-grade fever, fatigue, headache, moderate-to-severe myalgia, and arthralgia.

Three cases experienced febrile illness for more than 14 days. 2 patients had suffered from diarrhoea and extensive maculo-papular rash. A muscle biopsy from one patient revealed intense myositis, but no intramuscular cysts. Half of patients healed using usual antalgic treatments. 6 patients were given empirically albendazole 400 mg twice a day for 7 days and oral prednisone (0.5 mg/kg/day) for 3 days tapered over 2 days. 6 weeks later, 4 patients have still not recovered and were experiencing prolonged asthenia and myalgia. The patients were effectively treated with additional prednisone 0.5 mg/kg/day for 5 days and decreasing dosage over 14 days. By February 2012, one patient relapsed with musculoskeletal complaints. All patients were reported to GeoSentinel for lab and epidemiological investigation, and TropNet was informed.

The cluster of 12 diseased travelers living in southwestern France mainly contributes to the 65 patients returning from Malaysia who represent the 2nd wave of an outbreak of acute muscular sarcocystis-like illness. With little known about the disease, our experience suggests that late and prolonged manifestations may occur and short-term corticosteroid course could benefit symptomatic patients.

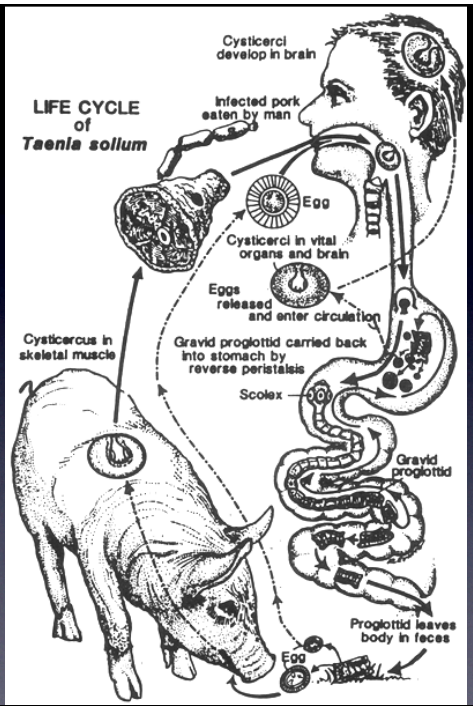
In Malaysia, the 1st sparse cases of human muscular sarcocystosis were noted in the late 1970's [4, 5] and an overall seroprevalence of nearly 20 percent was reported in 1991 [3, 5]. Thereafter, a cluster of symptomatic apparent cases was evidenced, affecting up to 7 of 15 US servicemen on maneuvers in a Malaysian jungle [1].

In the recent outbreaks in Malaysia, human muscular sarcocystosis is seen as a possible emerging foodborne zoonosis. The source of infection, specific species, and life cycle are to be elucidated, and the definitive animal host to be identified. Herein, humans are thought to become accidental intermediate hosts for zoonotic species by ingesting fecally-contaminated food or water material. Strikingly, it should be stressed that cats and macaques are numerous in Tioman Island and neighboring places, and are good candidates as infected predator animals [2, 5]. Overall, international travelers should be aware of the risk of acquiring this infection through genuine food habits.

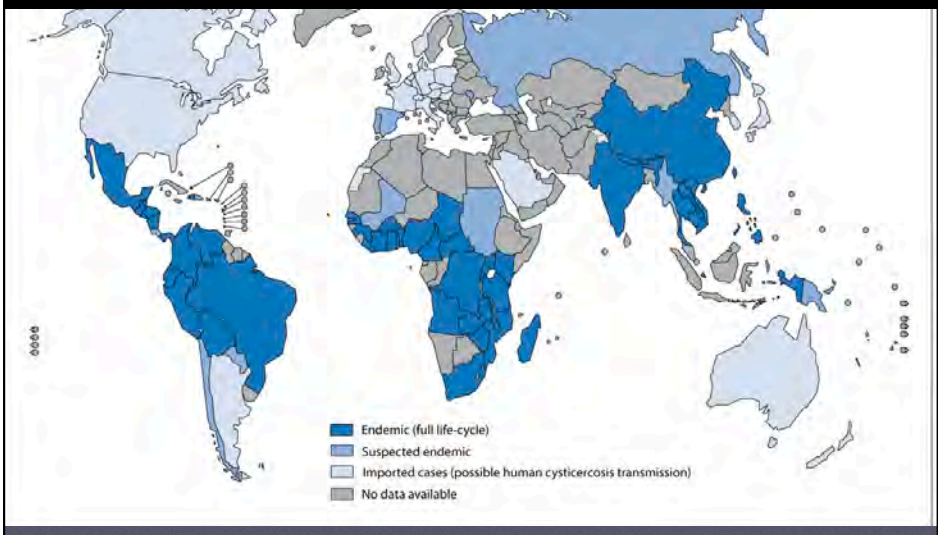
Cisticercosi

muscolare

SUINI	Taenia solium (**uomo**, intestino)	Cysticercus cellulosae (lingua, collo, spalle, cuore, intercostali, psoas, coscia, cervello, polmoni, fegato)
BOVINI	Taenia saginata (**uomo**, intestino)	C. bovis (cuore, masseteri, lingua, mm. pterigoidei, diaframma, esofago, coscia)
OVICAPRINI	Taenia ovis (carnivori, intestino)	C. ovis (cuore, pleure, diaframma, masseteri, lingua, esofago)
CONIGLI	Multiceps serialis (cane, intestino)	Coenurus serialis (connettivo intermuscolare, sottocutaneo, sottosieroso)

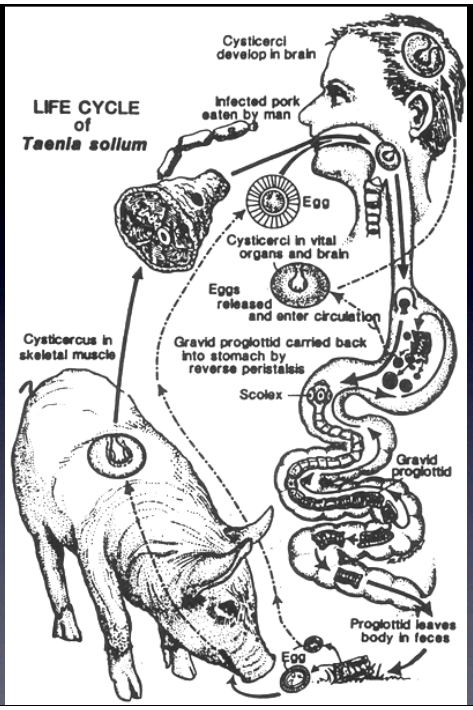


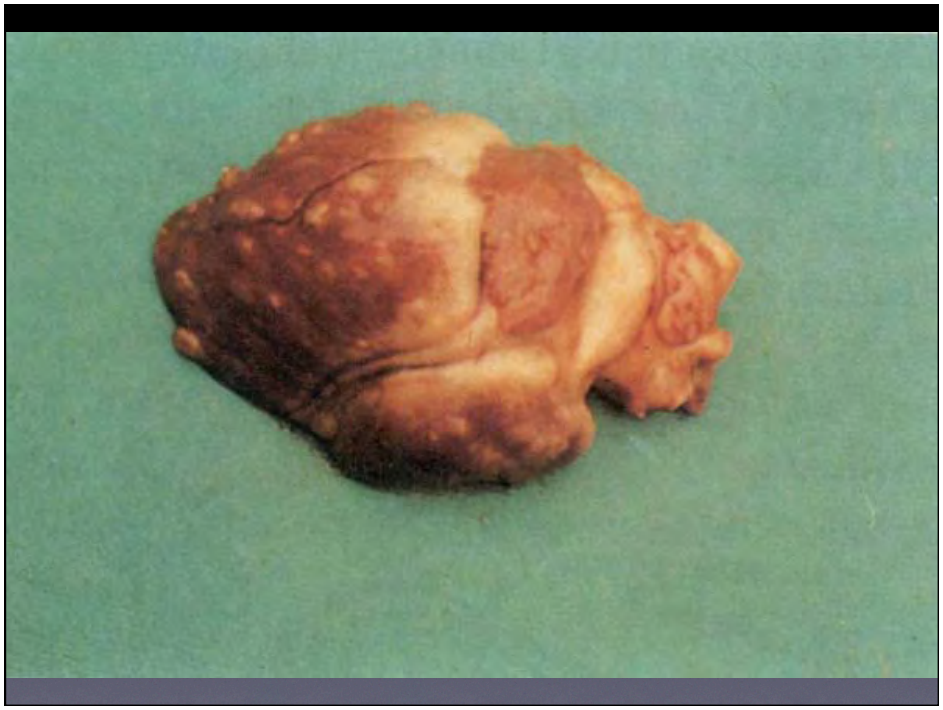
- Focolaio in Messico estate 2011
- 36 casi
- Attenzione alla neurocisticercosi da mani portate alla bocca o peristalsi inversa



5. Neglected tropical diseases in the world today

- 5.1 Dengue
- 5.2 Rabies
- 5.3 Trachoma
- 5.4 Buruli ulcer (*Mycobacterium ulcerans* infection)
- 5.5 Endemic treponematoses
- 5.6 Leprosy (Hansen disease)
- 5.7 Chagas disease (American trypanosomiasis)
- 5.8 Human African trypanosomiasis (sleeping sickness)
- 5.9 Leishmaniasis
- 5.10 Cysticercosis
- 5.11 Dracunculiasis (guinea-worm disease)
- 5.12 Echinococcosis
- 5.13 Foodborne trematode infections
- 5.14 Lymphatic filariasis
- 5.15 Onchocerciasis (river blindness)
- 5.16 Schistosomiasis (bilharziasis)
- 5.17 Soil-transmitted helminthiases





Giudizio sanitario
Reg. 854/2004 - All. I - Sez. IV - Capo IX

- ricerca sistematica di cisticercosi suina: superfici muscolari visibili, adduttori coscia, diaframma, intercostali, cuore, lingua, laringe (se necessario addominali e psoas liberati dal tessuto adiposo)
- cisticercosi bovina: > 6 settimane: masseteri esterni, interni, lingua (palpazione), pericario e cuore (incisione longitudinale per aprire i ventricoli e tagliare il setto interventricolare), diaframma (visivo)

Giudizio sanitario, segue

- art. 9, punto 2b: esclusione se generalizzata
- art. 9, punto 2k: frattaglie e visceri con lesioni di natura parassitaria
- art. 10: se non generalizzata --> consumo condizionato (freddo: tre settimane a -6.5°C, due a -10°C.