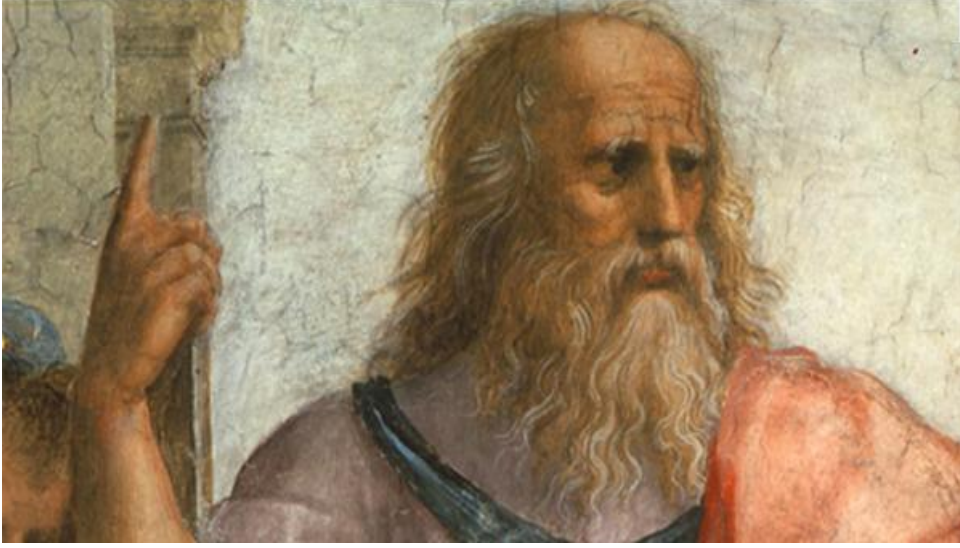
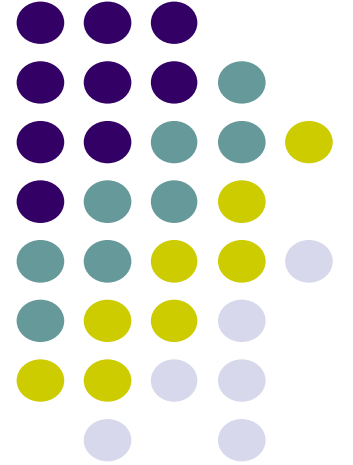


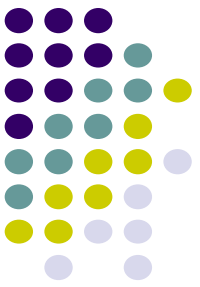


Bruselloz

Doç.Dr.Aysel Kocagül Çelikbaş
Ankara Numune Eğitim ve Araştırma Hastanesi

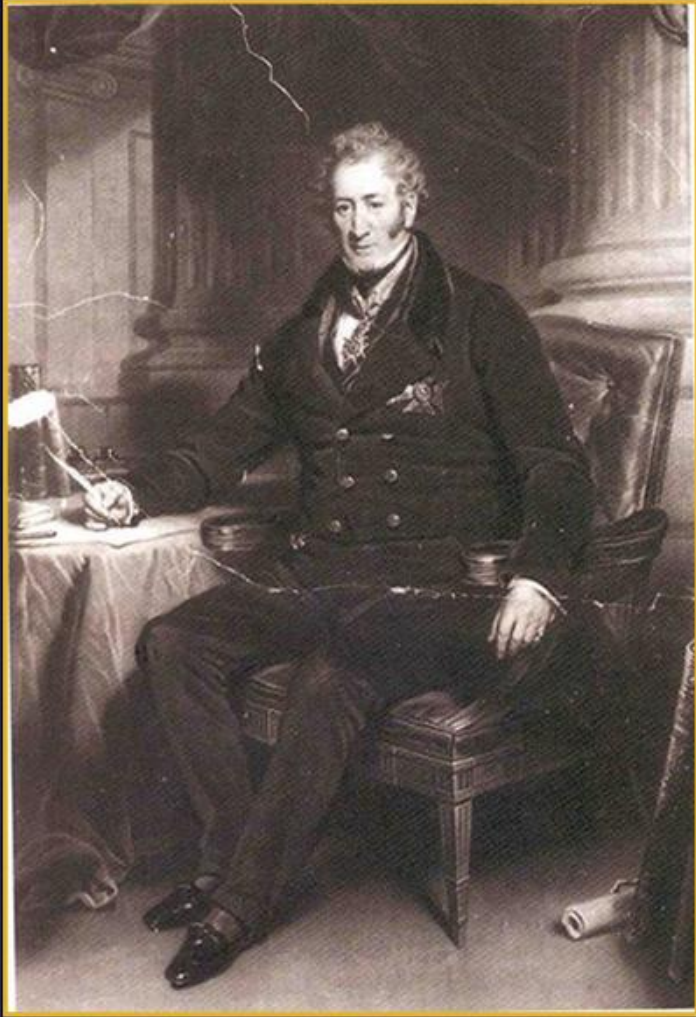
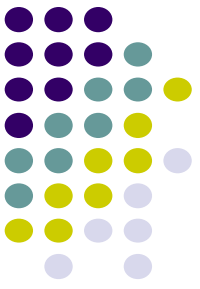


Bruselloz



- Malta ateşi
- Mediterranean fever
- Ondülan ateş
- Peynir hastalığı
- Mal Hastalığı

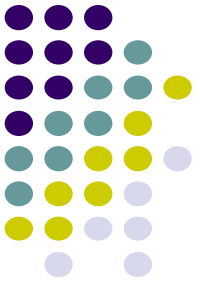
Tarihçe



Sir William Burnett (1779-1861)

- İngiliz donanmasında doktor
- Askerleri etkileyen farklı bir ateş tablosu tanımlamış

Tarihçe



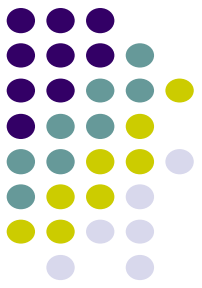
Jeffery Allen Marston

- İngiliz donanmasında cerrah
- Malta Ateşine yakalanmış
- Kendi hastalığını tüm ayrıntıları ile tanımlamış



ABOVE: Jeffery Allen Marston (1831–1911) contracted Malta fever and described his own case in great detail.

Private collection

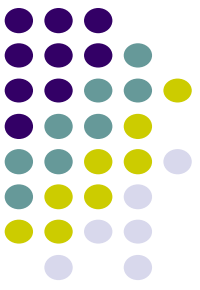


Sir David Bruce (1855-1931)

- İngiliz donanmasında doktor, mikrobiyolog
- *Micrococcus melitensis*'i bulmuş



Tarihçe

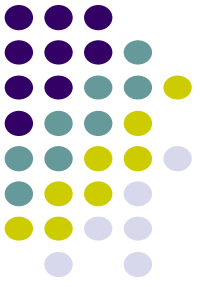


Bernhard Band (1848-1932)

- Danimarkalı doktor ve veteriner
- Sığırları koyunları ve keçileri ve atları infekte edibilen *Bacterium abortus*’u buldu.



Bulaş Yolları



Bulaş kaynağı

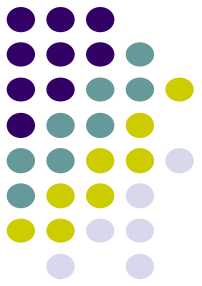
Enfekte hayvanların

- Eti
- Sütü
- Salyaları
- İdrarı
- Dışkısı
- Atık yavruları

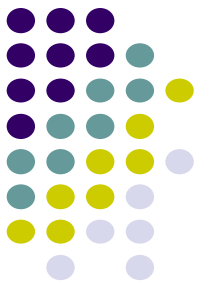
Bulaş yolu

- Sindirim sistemi
- İnhalasyon
- Kontamine ürünlere ve materyallere çıplak elle temas

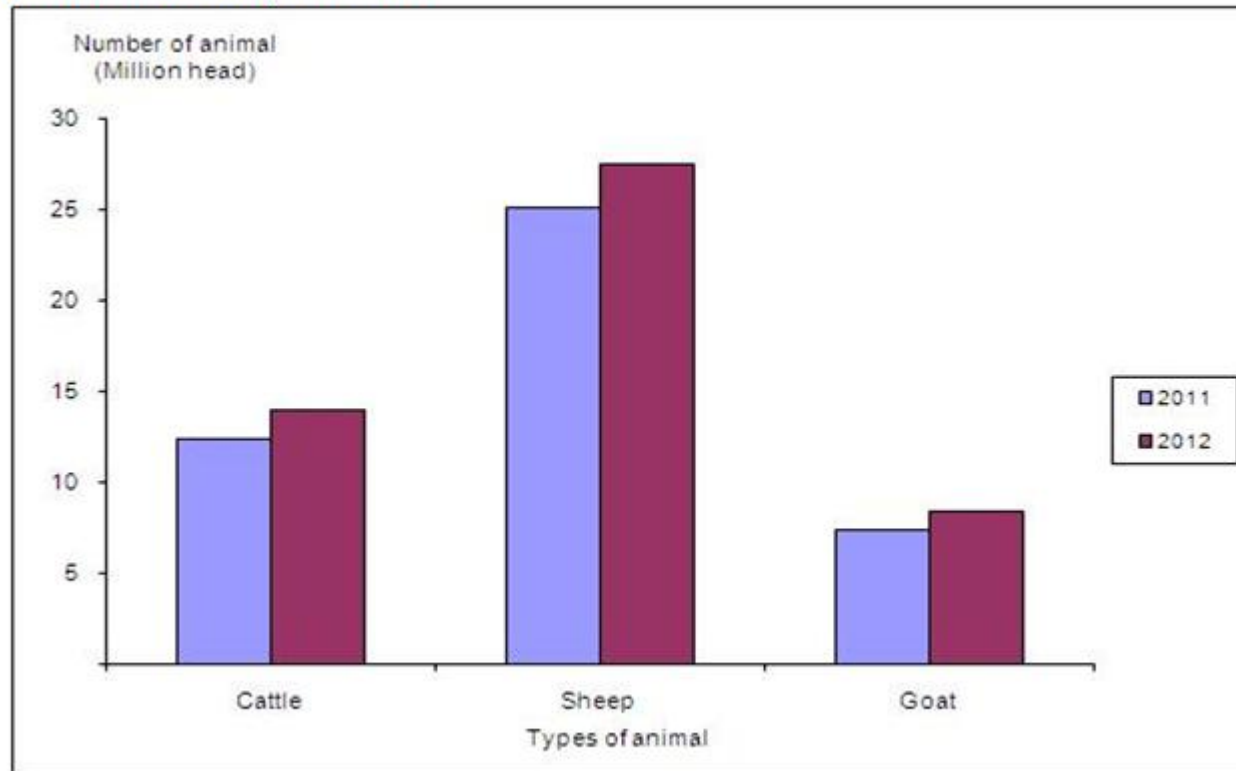
Bruselloz



- Akdeniz, Orta Doğu, Orta Asya, Orta Amerika'nın bazı bölgelerinde görülüyor
- Akdeniz ve Orta Doğu'da;
- İnsidans, 78 olgu/ 100000/yıl
- Arap yarımadası;
Seroprevalans %20, aktif olgu sayısı %2



Number of Animals, 2011-2012



Ülkemizde 1930-2000 Yılları Arasında Brusella Seroprevalansı

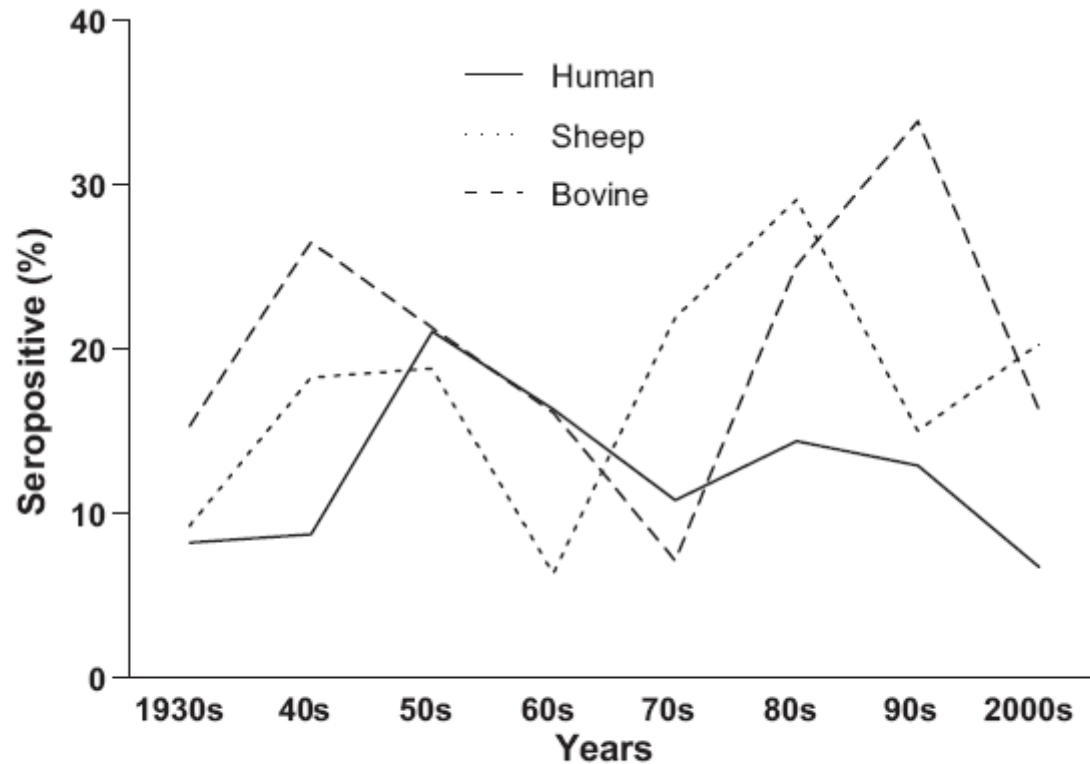


Figure 1. Seroprevalence of human and animal brucellosis in Turkey, 1930s–2000s.^{23–25,52,55–64}

International Journal of Infectious Diseases 16 (2012) e228–e235



Contents lists available at [SciVerse ScienceDirect](http://www.sciencedirect.com)

International Journal of Infectious Diseases

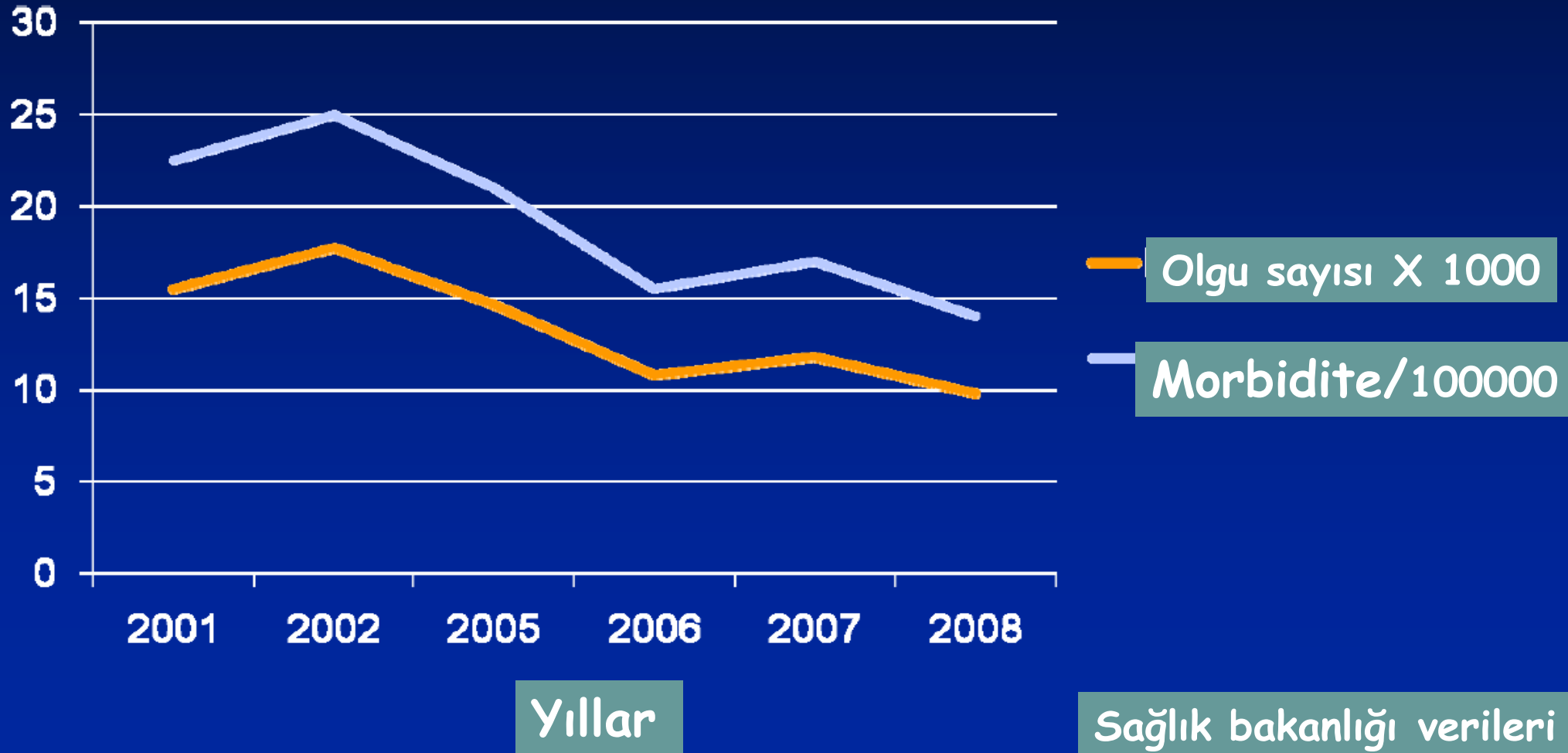
journal homepage: www.elsevier.com/locate/ijid

Review

Brucellosis in Turkey – an overview

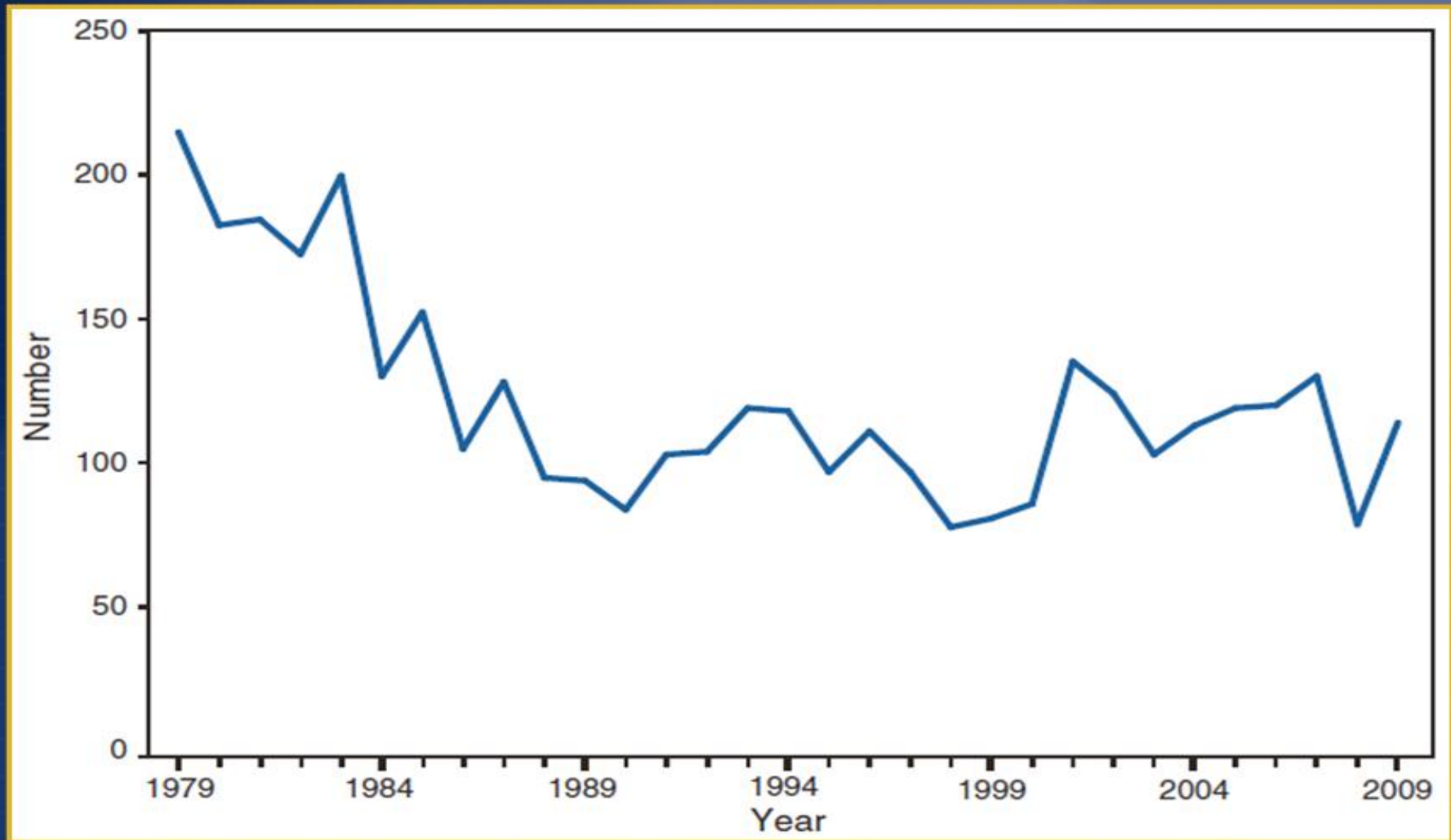
Zeki Yumuk^{a,*}, David O'Callaghan^{b,c}

Türkiye'de İnsan Bruselloz Olguları



Brucellosis: Reported cases, by year

United States, 1979 – 2009



Brucellosis: an unusual cause

[Chusid MJ](#), [Perzigian RW](#), [Dunne WM](#), [Gecht](#)

Abstract

A 3-year-old Wisconsin native with the syphilis titer. Blood and bone marrow cultures grew during which the child had ingested raw milk therapy. Although brucellosis has been a rare cause of fever of unknown origin in a child.



INFECTIOUS
DISEASE CLINICS
OF NORTH AMERICA

Infect Dis Clin N Am 21 (2007) 867–915

Fever of Unknown Origin: Clinical Overview of Classic and Current Concepts

Burke A. Cunha, MD, MACP^{a,b,*}

^aInfectious Disease Division, Winthrop-University Hospital, 259 First Street, Mineola, Long Island, NY 11501, USA

Brucellosis

Imported Brucellosis Associated with *Plasmodium falciparum* Malaria in a Traveler Returning from the Tropics

Sékéné Badiaga, Guenièvre Imbert, Bernard La Scola, Philippe Jean, Jean Delmont, and Philippe Brouqui

J Travel Med 2005; 12:282–284.

considered in a patient with an appropriate history of milk or goat cheese. Because localizing findings are often absent, the diagnosis is easily made if it is considered. Mental status changes/unusual affect may be seen. Brucellosis should be suspected in FUOs with (CNS) and bone involvement [40,41].



Contents lists available at SciVerse ScienceDirect

International Journal of Infectious Diseases

journal homepage: www.elsevier.com/locate/ijid



Review

Brucellosis in Turkey – an overview

Zeki Yumuk^{a,*}, David O'Callaghan^{b,c}

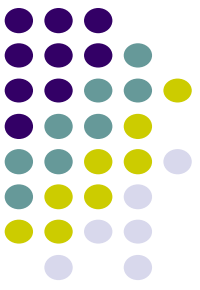
^a Department of Clinical Microbiology, Faculty of Medicine, Kocaeli University, Kocaeli, Turkey

Irak 278 /10⁵ /yıl
İran 238 /10⁵ /yıl

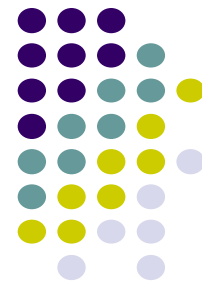
Suriye 1603 /10⁵ /yıl

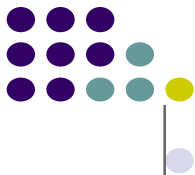
- *B. melitensis* > *abortus*
- Türkiye'de laboratuvar olarak konfirmasyonu olan ilk vaka 1915'de bildirilmiş.
- İlk Brusella abortus vakası 1932'de tanımlanmış
- 1970'de vaka sayısı 37
- 2004 yılında insidans 18000 olgu - 256.7 olgu/10⁵

Mesleki Bulaş: Riskli meslekler



- Veterinerler,
- Hayvan çiftliklerinde çalışanlar,
- Hayvancılık yapan aile bireyleri,
- Hayvansal gıda üretiminde ve hazırlanmasında çalışanlar (kasaplar, et paketi yapanlar, süt ve süt ürünleri hazırlama işinde çalışanlar),
- Yün ve deri ile uğraşanlar
- Bakteri izolasyonu ile uğraşan laboratuvarlarda çalışan hekim ve teknisyenler





J Hosp Infect. 2004 Mar;56(3):223-7.

Analysis of risk factors for laboratory-acquired

Ergönül O, Celikbaş A, Tezeren D, Güvener E, Dokuzoğuz B.

The First Infectious Diseases and Clinical Microbiology Clinic, Ankara N

Abstract

The aim of the study was to determine the risk factors for ac
Numune Education and Research Hospital, Turkey, before th
brucella infection. Twelve HCWs with brucella infection were
of the cases and 48 control HCWs was performed. Male phy
25.3; confidence interval (CI), 2.3–283.7; $P=0.008$]. Using glo

Laboratory-acquired brucellosis in Turkey

S. Sayin-Kutlu^{a,*}, M. Kutlu^a, O. Ergonul^b, S. Akalin^a, T. Guven^c,
Y.Z. Demiroglu^d, O. Acicbe^e, M. Akova^f Occupational Infectious
Diseases Study Group¹

^aDepartment of Infectious Diseases and Clinical Microbiology, Pamukkale University, Faculty of Medicine, Denizli, Turkey

^bDepartment of Infectious Diseases, Koc University, School of Medicine, Istanbul, Turkey

^cInfectious Diseases and Clinical Microbiology Clinic, Atatürk Training and Research Hospital, Ankara, Turkey

^dDepartment of Infectious Diseases and Clinical Microbiology, Baskent University Adana Hospital, Adana, Turkey

^eDepartment of Infectious Diseases and Clinical Microbiology, Ondokuz Mayıs University, Faculty of Medicine, Samsun, Turkey

^fDepartment of Medicine, Section of Infectious Diseases, Hacettepe University, School of Medicine, Ankara, Turkey

ARTICLE INFO

Article history:

Received 23 August 2011

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by J.A. Child

Available online 25 February
2012

Keywords:

Brucellosis

Laboratory-acquired infection

Risk factors

SUMMARY

Background: Laboratory healthcare workers (HCWs) are at risk of laboratory-acquired brucellosis (LAB).

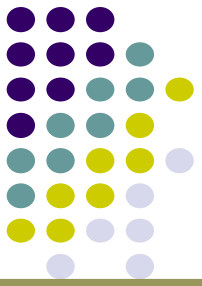
Aim: To describe the risk factors of LAB among HCWs.

Methods: A multicentre survey study was conducted by face-to-face interview in 38 hospitals from 17 provinces of Turkey. A structured survey was administered to the HCWs, working in infectious diseases clinics and microbiology departments, who were at risk of brucella infection.

Findings: The survey response rate was 100%. Of the 667 laboratory workers, 38 (5.8%) had a history of LAB. In multivariate analysis, factors independently associated with an increased risk of LAB included working with the brucella bacteria (odds ratio: 5.12; 95% confidence interval: 2.28–11.52; $P < 0.001$) and male gender (2.14; 1.02–4.45; $P = 0.042$). Using a biosafety cabinet level 2 (0.13; 0.03–0.60; $P = 0.009$), full adherence to glove use (0.27; 0.11–0.65; $P = 0.004$) and longer duration of professional life (0.86; 0.80–0.92; $P < 0.001$) were found to be protective.

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Semptomların Süresine Göre



Akut bruselloz

Semptom süresi

8 haftadan kısa

- Ateş, halsizlik, iştahsızlık, baş ağrısı, sırt ağrısı, kilo kaybı, miyalji ve artralji
- Splenomegali ve hepatomegali %6-35
- Organ tutulumu olabilir,
- Artrit %40-50

Subakut bruselloz

Semptom süresi

8-52 hafta

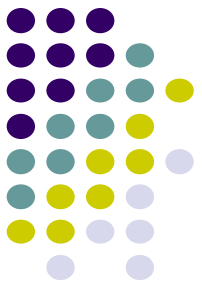
- Eksik veya yetersiz antibiyotik tedavisi
- Yanlış tanı nedeniyle uygunsuz antibiyotik tedavisi
- Farklı klinik tablolarla karşımıza çıkar
- Semptomlar genellikle hafiftir ve lokal organ yerleşimleri görülebilir

Kronik bruselloz

Semptom süresi

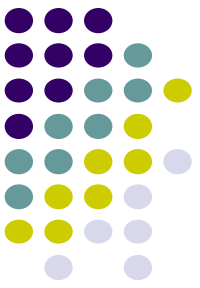
1 yıldan uzun

- Kronik yorgunluk sendromuna benzer
- Yaşlılarda sık görülür
- Depresyon gibi psikiyatrik semptomlar, halsizlik, terleme ve kilo kaybı
- Semptomlar uzun süre sonra tekrarlayabilir



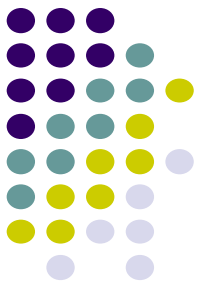
Klinik Tablo

KLİNİK SEMPTOMLAR



- İnsanlardaki inkübasyon periyodu: 1-3 hafta-3 ay
- Başlangıç semptomları sessiz veya akut
- Tüm organ ve sistemleri tutabilir

KLİNİK SEMPTOMLAR

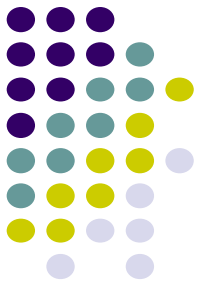


- Ateş,
- Terleme,
- Halsizlik,
- Baş ağrısı,
- Sırt ağrısı,

Hastalık ilerledikçe

- Karın ağrısı,
- Bulantı,
- Kusma,
- Sarılık,
- İshal ve/veya kabızlık

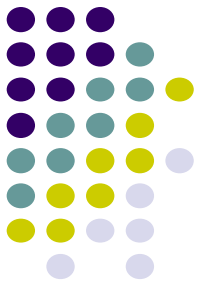
KLİNİK SEMPTOMLAR



Ateş

- Ondülan seyir gösterebilir
- Akut bruselloz: Olgularının %85'inden fazlasında ateş 38.5°C'nin üzerinde
- Subakut bruselloz: Ülkemizde nedeni bilinmeyen ateş tanısı ile takip edilen hastaların çoğunluğunu oluşturur
- Kronik olgularda ateş nadirdir ve genellikle lokal semptomlar

KLİNİK SEMPTOMLAR



- Artralji: %85
- Lenfadenopati: %10-20
- Splenomegali veya hepatomegali: %20-30
- Depresyon

287 basılı makale

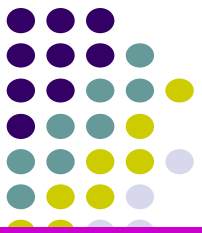
29 kongre sunumu

Toplam 4204 hasta

- Osteoartikuler tutulum 1839 vaka (%44)
- Hematopoetik tutulum 1401 vaka (%33)
- Nörolojik tutulum 413 vaka (%9)
- Gastrointestinal sistem 182 vaka (% 4.3)
- Ürogenital sistem 171 olgu (%4)
- Cilt Tutulumu 146 olgu(%3.5)
- Kardiyovasküler sistem 67 olgu (%2)
- Respiratuvar sistem 46 olgu (%1)
- Okuler tutulum 12 olgu (%0.2)

Brusellozun Komplikasyonları-1

İskelet Sistemi



Olguların ~%40- 60'ı

Spondilit

Spondilodiskit

Osteomiyelit

Paravertebral abse

İleopsoas absesi

Artrit
Bursit
Tenosinovit

Sakroileit



- Ariza J. Clin Infect Dis 1993;16:761
- Colmenero JD. Medicine 1996;75:195
- Solera J. Clin Infect Dis 1999;29:1440
- Turgut M. Acta Neurochir (Wien) 2006;148:1033
- Colmenero JD. Clin Infect Dis 2008;46:426

Original

Human brucellosis in Turkey: a review of the literature 1990 and

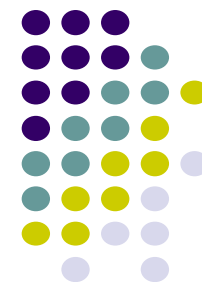
Osteoarticular system	n	%
Sacroiliitis	723	17.19
Spondylodiscitis	546	12.98
Osteoarthritis	541	12.86
Osteomyelitis	8	0.19
Bursitis	8	0.19
Pyomyositis	5	0.11
Septic arthritis	2	0.04
Septic arthritis	2	0.04
Septic arthritis	1	0.02
Septic arthritis	1	0.02
Septic arthritis	1	0.02
Septic arthritis	1	0.02
Total	1839	43.74

ANEAH olguları

Tüberküloz spondiliti + psoas absesi.. 16 /63 (%25)

Brusella spondiliti + psoas absesi 13 /96 (%13)

Sonuç: Psoas absesi $\neq$ tüberküloz



ORIGINAL PAPER

Osteoarticular Manifestations of Brucellosis

Snjezana Mehanic, Rusmir Baljic, Velida Mulabdic, Ilhama Huric-Jusufo, Fikret Pinjo, Jasna Topalovic-Cetkovic, Vesna Hadziosmanovic

Clinic for Infectious Diseases, Clinical Center of University of Sarajevo, Bosnia and Herzegovina

% 78 osteoartiküler tutulum

Osteoartiküler tutulumların % 40'ı spondilodiskit

Osteoarticular Involvement in Brucellosis in Macedonia

Mile Bosilkovski, Ljiljana Krteva, Sonja Capa

Table 1. Sites of involvement in 196 patients with osteoarticular brucellosis

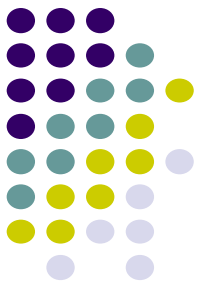
Type of involvement	No. (%)
Spondylitis	35 (17.9)
Spondylitis+sacroiliitis	10 (5.1)
Spondylitis+sacroiliitis + peripheral arthritis	2 (1.0)
Spondylitis+peripheral arthritis	9 (4.6)
Sacroiliitis	29 (14.8)
Sacroiliitis+peripheral arthritis	19 (9.7)
Peripheral arthritis	82 (41.8)
Peripheral arthritis+bursitis	6 (3.1)
Peripheral arthritis+sternochondral arthritis	1 (0.5)
Costochondral arthritis	1 (0.5)
Tendinitis	2 (1.0)

Table 2. Distribution and rates of 172 peripheral arthritides in 119 patients with brucellar peripheral arthritis

Joint	Arthritis (No.)		Total (%)
	unilateral	bilateral	
Hip	45	1	46 (38.6)
Knee	34	4	38 (31.9)
Ankle	23	6	29 (24.4)
Shoulder	13	0	13 (10.9)
Elbow	6	0	6 (5)
Wrist	8	2	10 (8.4)
Sternoclavicular	9	1	10 (8.4)
Other*	4	1	5 (4.2)

*Temporomandibular and interphalangeal joints of the hands.

Distribution of osteoarticular localization according to illness duration

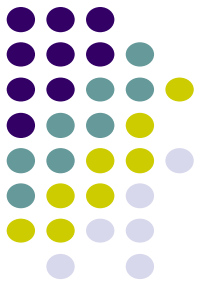


	Sakroileit	Periferal artrit	Artrit	Spondilit
Akut	%52.4	%39.7	%6.3	%1.6
Subakut	% 41.7	%41.7	%11.1	%5.5
Kronik	0	0	0	%100

Gotuzzo et al. Semin Arthritis Rheum. 1982;12:245-55.

Brusellozun Komplikasyonları-2

Nörolojik Sistem

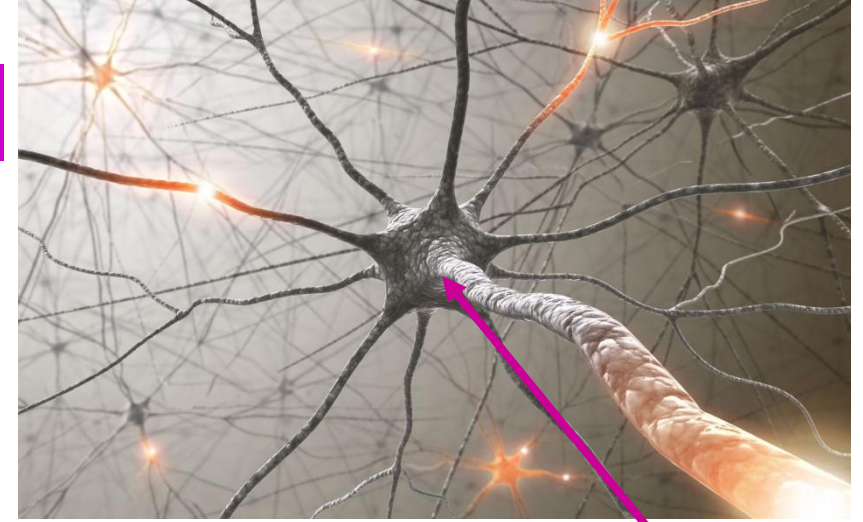


Sıklık: <%5

Meningoensefalit
Serebral abse
Depresyon
Psikoz



Miyelit



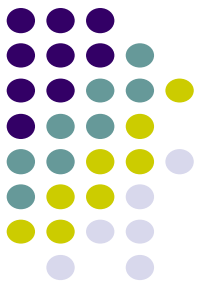
Nörit

-Al-Sous MW, et al. Am J Neuroradiol 2004;25:395
-Gul HC, et al. Int J Infect Dis 2009;13:e339

Table 3. Involvement of the nervous system.

Turk J Med Sci
2011; 41 (3): 549-555

Nervous system	n	%			
Meningoencephalitis	211	5.01	Pituitary gland granuloma	3	0.07
Major depression	46	1.09	Spinal cord granuloma	3	0.07
Paravertebral abscess	26	0.61	Peripheral neuropathy	2	0.04
Epidural abscess	26	0.61	Ventriculoperitoneal shunt infection	2	0.04
Hearing loss	20	0.47	Acute transverse myelitis	2	0.04
Abducens palsy	17	0.40	Prevertebral abscess	2	0.04
Papilledema	9	0.21	Acute psychosis	2	0.04
Polyradiculoneuritis	9	0.21	Extradural granuloma	1	0.02
Brain abscess	5	0.11	Facial palsy	1	0.02
Myelitis	5	0.11	Guillain-Barré	1	0.02
Convulsion	4	0.09	Arachnoid cyst	1	0.02
Foot drop	4	0.09	Subdural hematoma	1	0.02
Peripheral neuritis	3	0.07	Cerebral infarct	1	0.02
Optic neuritis	3	0.07			
Delirium	3	0.07	Total	413	9.82



Neurobrucellosis: Clinical and Diagnostic Features

Tumer Guven,¹ Kenan Ugurlu,² Onder Ergonul,³ Aysel Kocagul Celikbas,⁴ Sebnem Eren Gok,⁴ Selcuk Comoglu,⁵ Nurcan Baykam,⁴ and Basak Dokuzoguz⁴

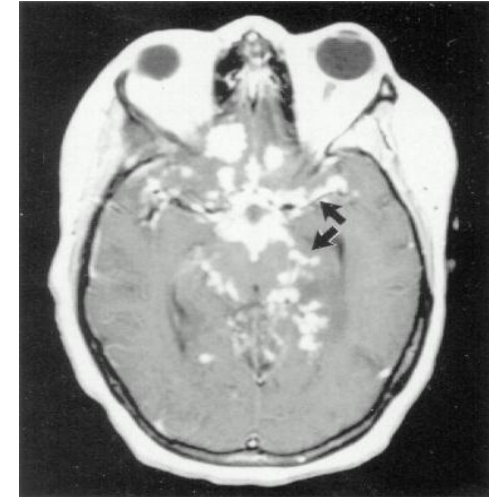
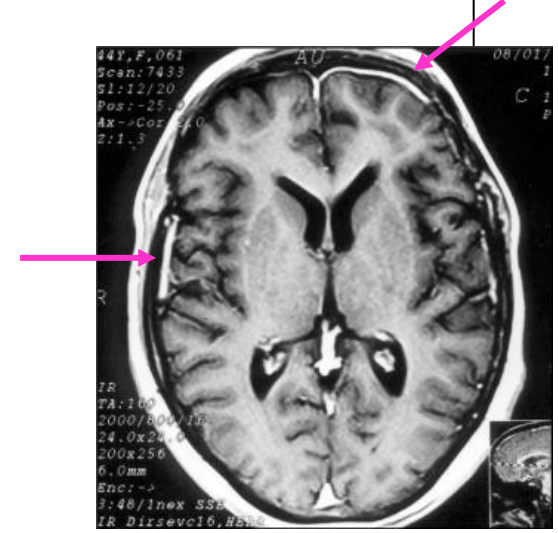
¹Infectious Diseases and Clinical Microbiology Clinic, Ataturk Training and Research Hospital, Ankara, ²Infectious Diseases and Clinical Microbiology Clinic, 25 Aralik Community Hospital, Gaziantep, ³School of Medicine, Infectious Diseases and Clinical Microbiology Department, Koç University, Istanbul; ⁴Infectious Diseases and Clinical Microbiology Clinic, Ankara Numune Training and Research Hospital, and ⁵Neurology Clinic, Dışkapı Yıldırım Beyazıt Training and Research Hospital, Ankara, Turkey

- 2002-2005 yılları arasında
- Nörolojik semptom ve/veya bulgusu olan 128 olguya LP yapıldı
- 48 olguya nörobruselloz tanısı kondu

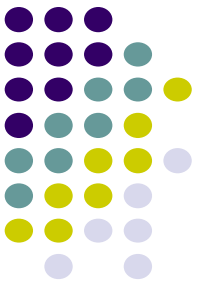
Nörobruselloz Şüphesi

Kimlere LP yapıldı ?

- Ciddi baş ağrısı,
Uykusuzluk,
Kişilik değişikliği,
Amenore,
İnkontinans
- Ense sertliği,
Konfüzyon,
Depresyon,
Nörolojik bulgu varlığında



Nörobruselloz Tanısı



Nörobruselloz şüphesi uyandıran semptom ve bulguların varlığında,

- (1) Beyin omurilik sıvısından (BOS) *Brusella* spp izole edilmesi ve/veya BOS'da antibrusella antikorların varlığı
- (2) BOS'da lenfositoz, protein artışı ve glukoz düzeyinde düşme
- (3) Kranial Magnetik Rezonans Görüntüleme (MRI) ve Bilgisayarlı tomografide tutulum olması (Leptomeningeal tutulum, nodular lezyonlar , granülomatöz lezyonlar vb.)

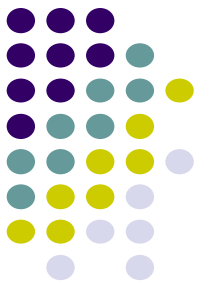


Table 1. Diagnostic Findings of 48 Cases of Neurobrucellosis

CSF <i>Brucella</i> Agglutination Titer With Coombs Serum	No. of Cases (n = 48)	<i>Brucella</i> spp Isolated in Blood Culture (n = 19)	<i>Brucella</i> spp Isolated in CSF Culture (n = 7)	CSF Protein >45 mg/dL (n = 28)	CSF/Blood Glucose Ratio <0.4 (n = 16)	Presence of Cells (>5/mm ³) in CSF (n = 28)	MRI/CT Findings Supporting Diagnosis (n = 13)
0	2	2	2	0 (0)	1 (50%)	1 (50%)	0
1/4	1	...	...	1 (100)	0	0	1 (100%)
1/8	7	4	...	4 (50)	0	4 (57%)	3 (42%)
1/16	8	3	1	5 (63%)	2 (25%)	6 (75%)	2 (25%)
1/32	13	3	1	6 (46%)	1 (8%)	6 (46%)	0
1/64	4	1	1	3 (75%)	2 (50%)	4 (100%)	1 (25%)
1/128	2	1	...	1 (50%)	1 (50%)	1 (50%)	1 (50%)
1/256	3	1	...	2 (66%)	3 (100%)	2 (67%)	2 (67%)
1/512	8	4	2	6 (75%)	6 (75%)	4 (50%)	3 (37%)

Abbreviations: CSF, cerebrospinal fluid; CT, computed tomography; MRI, magnetic resonance imaging.

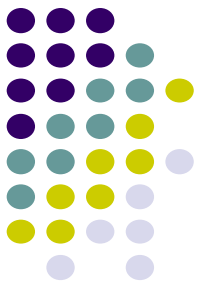
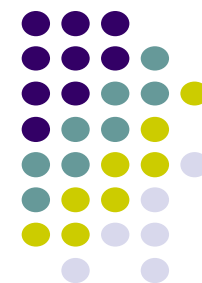


Table 2. Presenting Symptoms

Symptom	Neurobrucellosis, No. (%) (n = 48)	Non- neurobrucellosis, No. (%) (n = 80)	<i>P</i> Value
General symptoms			
Fever	38 (79)	62 (78)	.825
Myalgia	37 (77)	67 (84)	.350
Sweating	35 (73)	63 (79)	.451
Low back pain	31 (65)	39 (49)	.081
Weight loss	30 (63)	42 (53)	.270
Fatigue	28 (58)	47 (59)	.963
Loss of appetite	26 (54)	33 (41)	.156
Arthralgia	23 (48)	43 (54)	.523
Vomiting	14 (29)	14 (21)	.311
Amenorrhea	1 (2)	2 (1)	.707
Neurologic symptoms			
Headache	41 (85)	51 (64)	.008
Blurred vision	11 (23)	6 (8)	.013
Loss of hearing	9 (19)	4 (5)	.013
Confusion	5 (10)	1 (1)	.018
Incontinence	4 (8)	2 (3)	.131

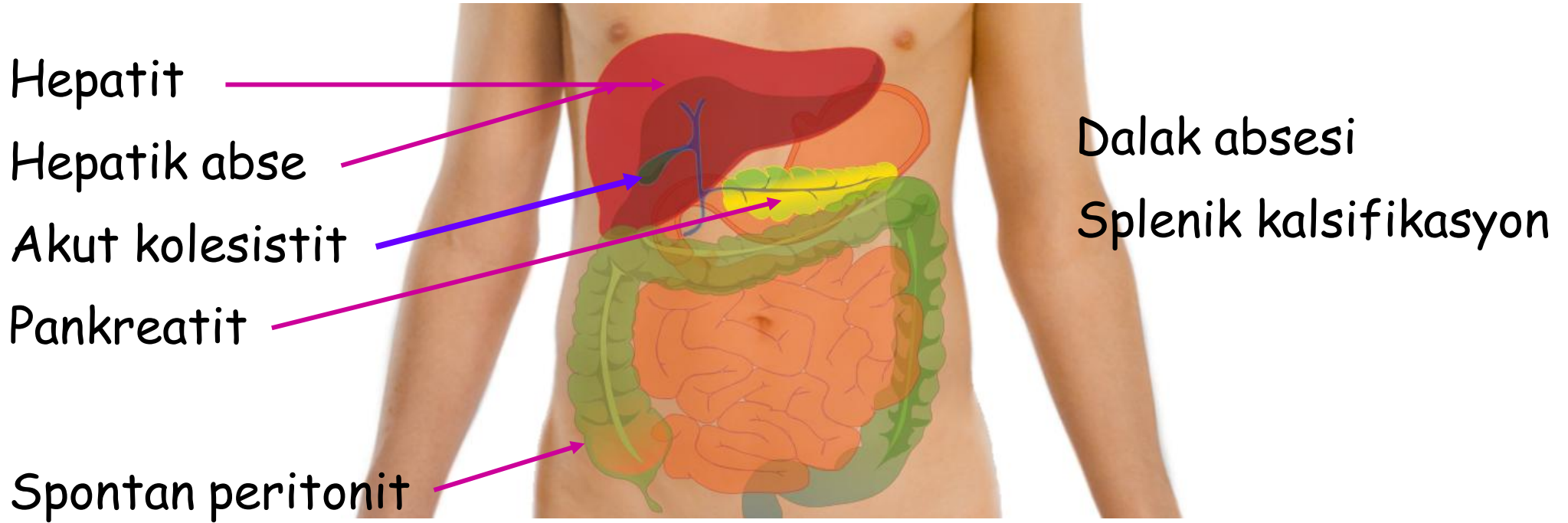
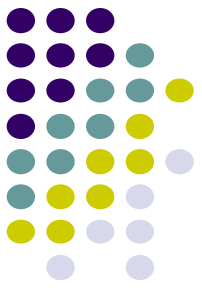
Table 3. Neurological Signs

Neurological Sign	Neurobrucellosis, No. (%) (n = 48)	Non- neurobrucellosis, No. (%) (n = 80)	<i>P</i> Value
Behavioral changes within last month	29 (60)	10 (13)	<.001
Agitation	12 (25)	8 (10)	.024
Muscle weakness	11 (23)	3 (4)	.001
Disorientation	10 (21)	3 (4)	.002
Neck rigidity	8 (17)	2 (3)	.004
Changes in deep tendon reflexes	5 (10)	1 (1)	.018
Paresthesias	5 (10)	1 (1)	.018
Apathy	4 (8)	2 (3)	.131
Dysarthria	3 (6)	1 (1)	.115
Diplopia	2 (4)	0 (0)	.066
Ataxia	2 (4)	0 (0)	.066
Pseudotumor cerebri	2 (4)	0 (0)	.066
Facial paralysis	2 (4)	0 (0)	.066
Areflexia	2 (4)	0 (0)	.066



Brusellozun Komplikasyonları-5

Gastrointestinal Sistem



~ %70 olguda iştahsızlık, kilo kaybı, bulantı, kusma

Human

Aim: Brucellosis
a review of the
Materials and

Table 4. Involvement of the gastrointestinal system.

Gastrointestinal system	n	%
Hepatitis	141	3.35
Spontaneous bacterial peritonitis	13	0.21
Splenic abscess	9	0.21
Acute abdominal pain	4	0.09
Ascites	3	0.07
Pancreatitis	2	0.04
Splenic pseudocyst	2	0.04
Acute cholecystitis (acalculous)	2	0.04
Ileitis	2	0.04
Hepatic abscess	2	0.04
Panniculitis	1	0.02
Splenic hematoma	1	0.02
Total	182	4.32

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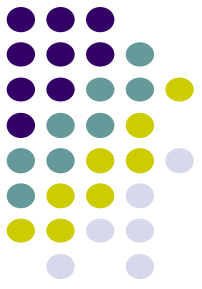
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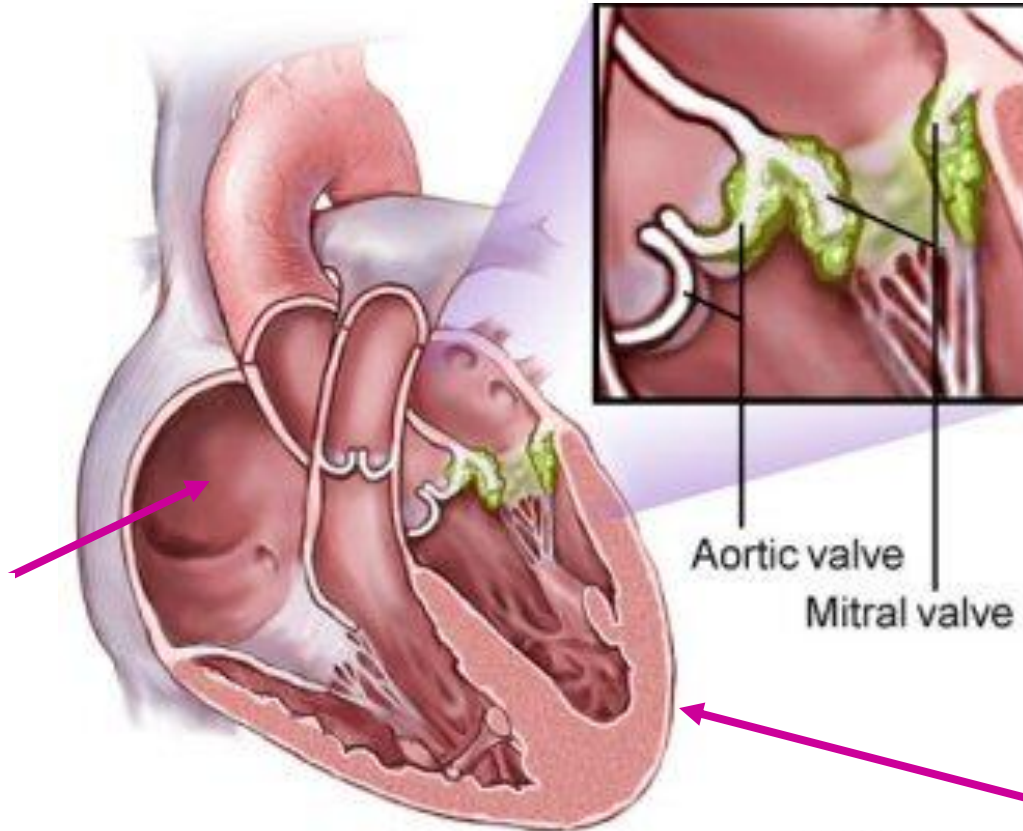


Brusellozun Komplikasyonları-4

Kardiovasküler Sistem



Endokardit (aortik>mitral)



Miyokardit

Aortic valve
Mitral valve

Perikardit

© medmovie.com

-Sasmazel A, et al. Ann Thorac Surg 2010;89:1432

-Al-Harthi SS. Int J Cardiol 1989;25:321



Original Article

Human brucellosis in Turkey

Şebnem C

Aim: Brucellosis is a systemic infection, which is a review of the literature related to human brucellosis.

Materials and methods: In order to find the prevalence of brucellosis in Turkey, a review of the literature related to human brucellosis was conducted.

Table 7. Involvement of the cardiovascular system.

Cardiovascular system	n	%
Endocarditis	51	1.21
Mycotic aneurysm	6 (3 patients with subarachnoid hemorrhage)	0.14
Pancarditis	5	0.11
Pericarditis	4	0.09
Capillary leak syndrome	1	0.02
Total	67	1.59



BRUCELLOSIS AND HEART DISEASE

II. FATAL BRUCELLOSIS: A REVIEW OF THE LITERATURE AND REPORT OF NEW CASES

THOMAS M. PEERY, M.D., AND LESTER F. BELTER, M.D.*

44 fatal seyreden bruselloz olgusu

35 olguda ölüm sebebi endokardit (%80)

- Brucella abortus'dan ölenlerde endokardit insidansı (% 95)

- Brucella melitensis'de endokardit (%69)

- Brucella suis'de (%43)

Endokarditli 35 olgunun otopsisinde

Aort kapak tutulumu %83

Mitral kapak tutulumu %45

Brusella endokarditinde en sık rastlanan
ölüm sebebi "Konjestif Kalp Yetmezliği"

Variable

Number of BE patients

Mean age (y)

Sex ratio (M/F)

Contamination with the microorganism caused by:

Direct contact with animals

Consumption of non-pasteurized dairy products

No contact or consumption of dairy products

Diabetes mellitus

Hypertension

Preoperative MI

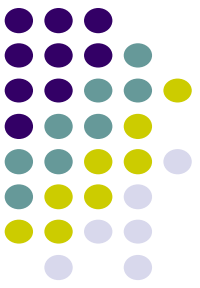
Embolic events

Cerebral hemorrhagic stroke

Febrile patients

Aort kapak tutulumu 19 olguda
Mitral kapak tutulumu 7 olguda
Her iki kapak tutulumu 5 olguda

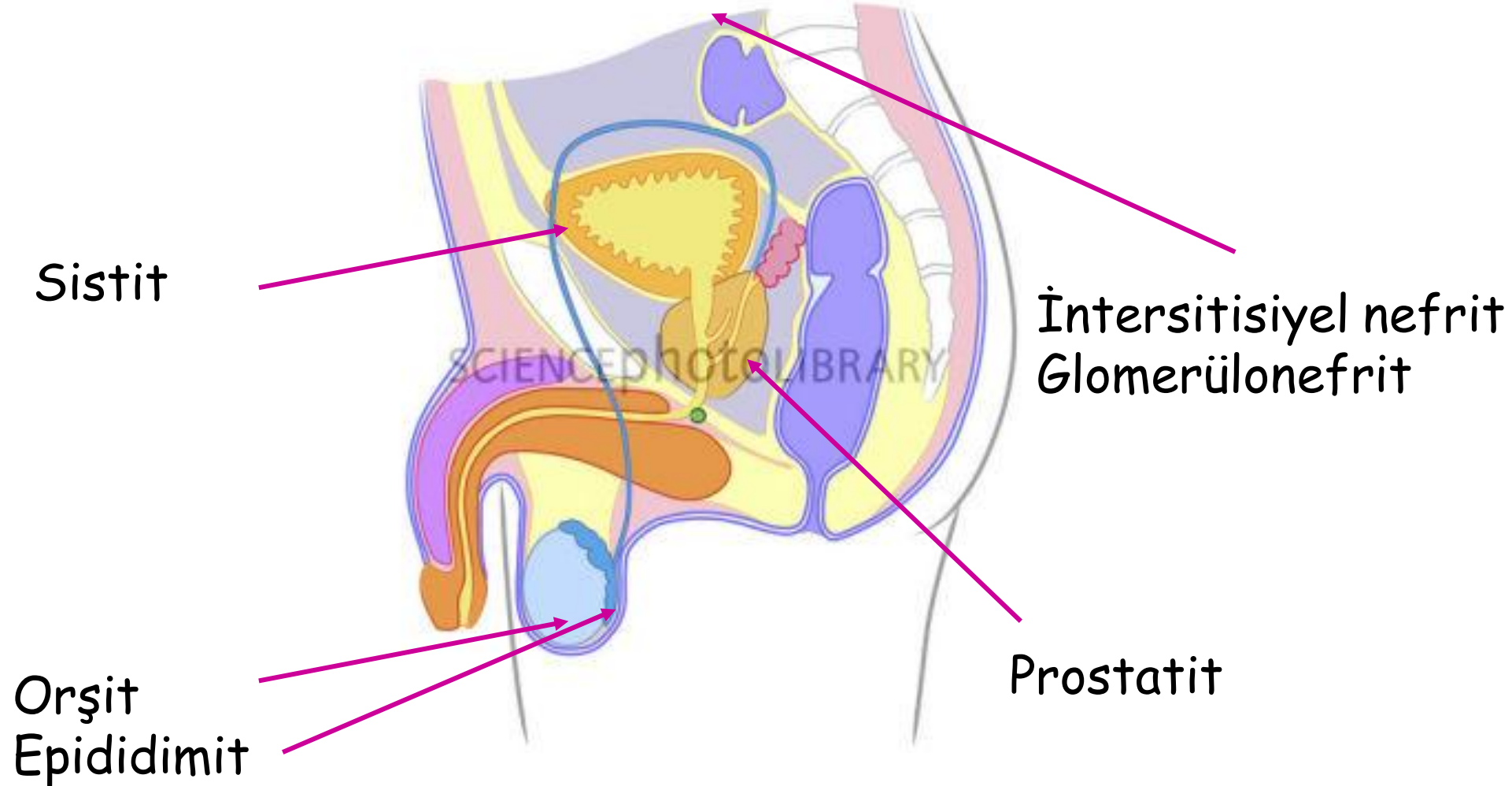
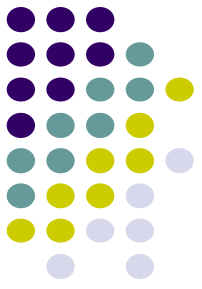
Brusella Endokarditinin Komplikasyonları



- Miyokardial abse ve anevrizma
- Kapak (Sivri uç)perforasyonu
- Chordae tendineae rüptürü
- Sol ventriküler yetmezlik
- Dissemine intravasküler koagülasyon
- Embolik fenomen (mikotik anevrizma)
- Transien iskemik atak,
- Miyokardial ve diğer organ infarktları

Brusellozun Komplikasyonları-3

Genitoüriner Sistem

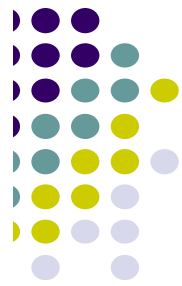


Human b

Aim: Brucellosis i
a review of the lite
Materials and m

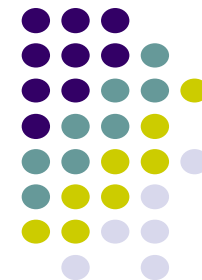
Table 5. Involvement of the urogenital system.

Urogenital system	n	%
Epididymo-orchitis	132	3.13
Chronic renal failure	8	0.19
Prostatitis	7	0.16
Pyelonephritis	6	0.14
Testicular abscess	4	0.09
Breast abscess	3	0.07
Ovarian abscess	2	0.04
Spontaneous abortus	2	0.04
Hematuria	2	0.04
Glomerulonephritis	2	0.04
Renal abscess	1	0.02
Acute renal failure	1	0.02
Bilateral mastitis	1	0.02
Total	171	4.06





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<http://intl.elsevierhealth.com/journals/ijid>


A complication of brucellosis: Epididymoorchitis

Esragül Akıncı^{a,*}, Hürre
Ayşe Erbay^a, Selim Sırrı
Neriman Balaban^c, Ali A

Table 1 Characteristics of patients with and without brucellar epididymoorchitis.

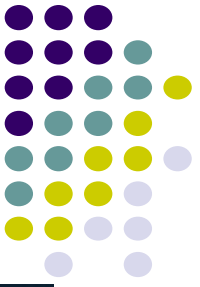
Characteristics of the patients	Patients with epididymoorchitis (n = 17) No. (%)	Patients without epididymoorchitis (n = 117) No. (%)	p Value
Mean age, years (SD)	36.9 (7.1)	46.8 (18.4)	0.03
Mean duration of symptoms, days (SD)	60.7 (91.9)	82.1 (92.7)	0.38
Scrotal pain	16 (94)	0	—
Scrotal swelling	14 (82)	0	—
Night sweats	10 (59)	0	—
Scrotal redness	9 (53)	0	—
Fever	9 (53)	54 (46)	0.60
	(53)	61 (52)	0.95
	(47)	41 (35)	0.34
	(35)	19 (16)	0.06
	(35)	44 (38)	0.85
	(35)	0	—
	(29)	19 (16)	0.19
	(24)	38 (32)	0.33
	(18)	29 (25)	0.38
	(18)	18 (15)	0.52
	(12)	13 (11)	0.60
	(12)	0	—
	(6)	0	—
Hematuria	1 (6)	0	—

134 Erkek olgunun 17' sinde (% 12)

- 11 olguda unilateral epididimoorşit
- 4 olguda unilateral orşit
- 2 olguda unilateral epididimit
- 1 olguda testiküler abse

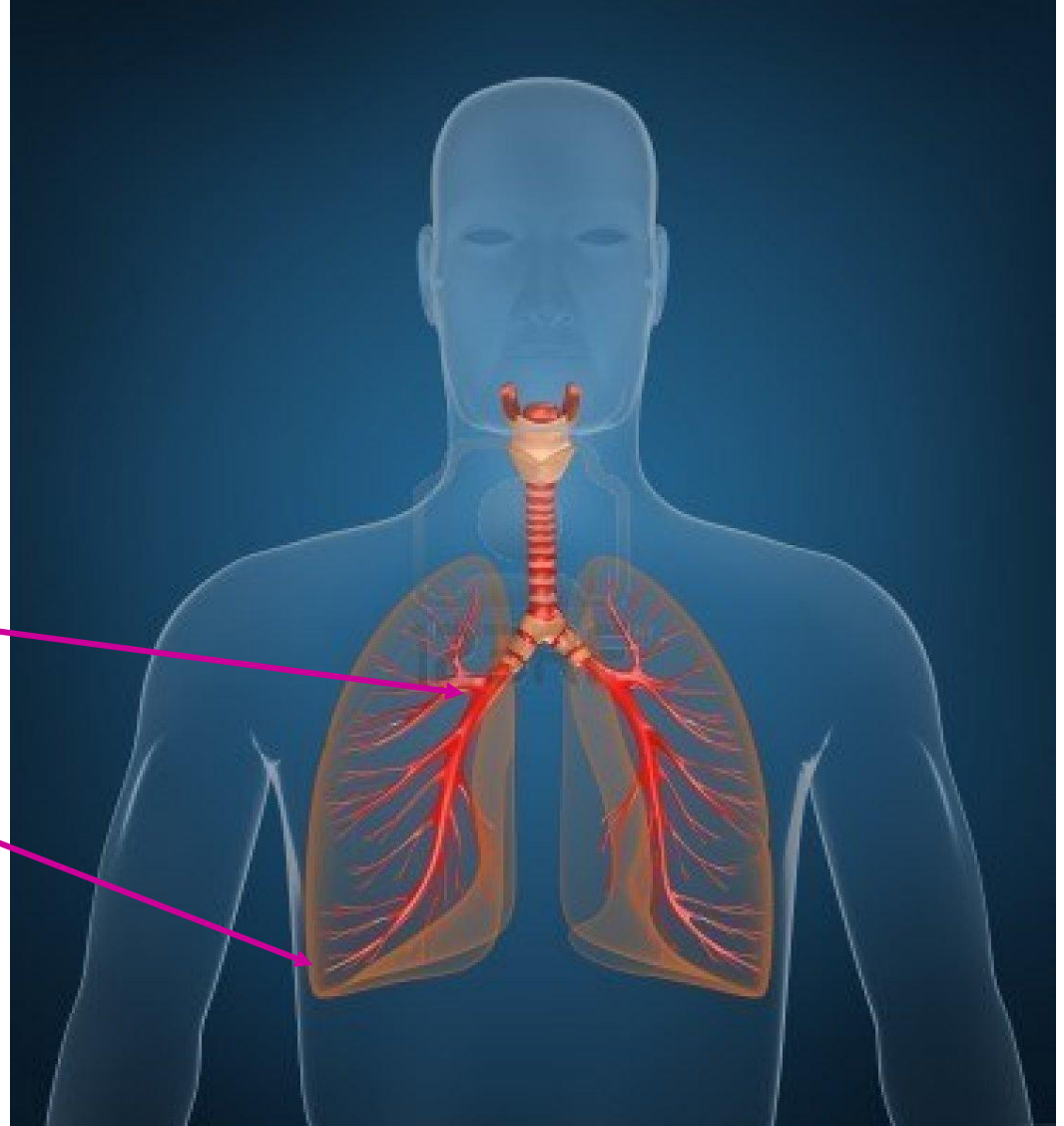
Brusellozun Komplikasyonları-6

Pulmoner Sistem



Sıklık %1-5

Hiler lenfadenopati
Perihiler infiltrat,
İnterstisiyel infiltrat
Nodüler lezyon
Plevral efüzyon





Human brucellosis in Turkey

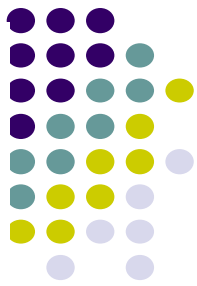
Şebnem C

Aim: Brucellosis is a systemic infection, which is a review of the literature related to human brucellosis.

Materials and methods: In order to find the

Table 8. Involvement of the respiratory system.

Respiratory system	n	%
Pneumonia	16	0.38
Pleuritis	14	0.33
Parenchymal granuloma	9	0.21
Bronchitis	5	0.11
Paratracheal lymphadenopathy	1	0.02
Acute respiratory distress syndrome	1	0.02
Total	46	1.09



Brucellosis and the Respiratory System

Georgios Pappas,¹ Mile Bosilkovski,³ Nikolaos Akritidis,² Maria Mastora,² Liliana Krteva,³
and Epaminondas Tsianos¹

1999 - 2002

Balkan yarımadası

3 hastane

450 bruselloz olgusu

31'inde respiratuvar komplikasyon

İntersitial pnömoni- 15 olgu

Lober pnömoni -12 olgu

Bal peteği paterni- 4 olgu

Plevral efüzyon -3 olgu

(2 olguda mayide *Brucella melitensis*)

Hiler LAP -2 olgu

Radyolojik bulgu yok -

Paroksizmal Öksürük

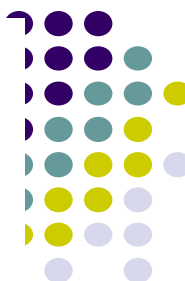
of many developed countries around the world [1, 2]. It is commonly implicated in the everyday differential diagnosis in various clinical settings, because the peculiar presentations and complications of the infection are not rare [3]. Transmission is achieved through direct contact with contaminated animals, ingestion of infected dairy products, and inhalation of infectious aerosol particles. The last means of transmission is not only the route by which *brucellae* achieve direct contact with the respira-

of Internal Medicine, Peripheral General Hospital
nditions, Medical Faculty, Skopje, Former Yugoslav

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Pulmonary involvement of Brucellosis: a report of six cases

[F Simsek](#), [MT Yildirmak](#), [H Gedik](#), [A Kantürk](#), and [EN Iris](#)

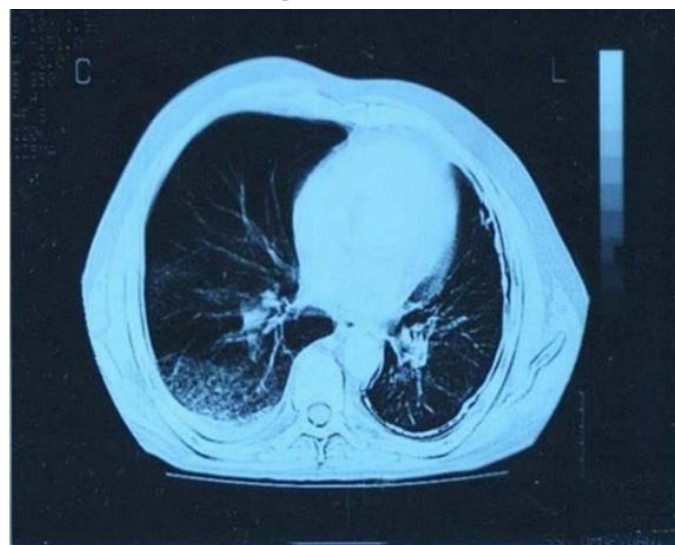
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Abstract

[Go to:](#) ☒

Background

Pulmonary involvement of brucellosis rarely occurs due to inhalation of infected aerosol or hematogenous



monary manifestations of brucellosis that occur rarely in Brucella infections port.

with brucellosis treated and followed up at infectious diseases clinic have tion to their clinical and laboratory findings and treatment results.

Brusellozun Komplikasyonları-7

Hematopoetik Sistem



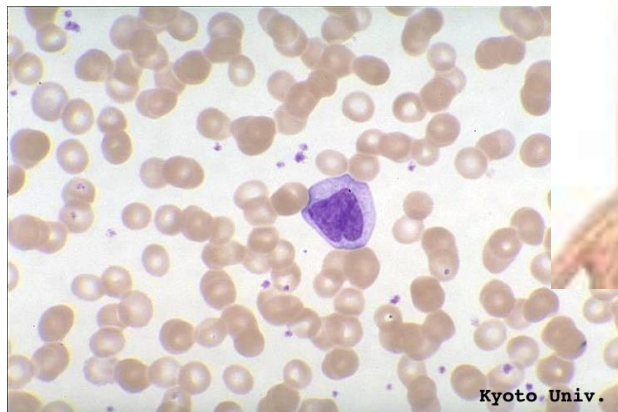
Table 2. Involvement of the haemopoietic system.

Anemi

Lökopeni

Trombositopeni

Pansitopeni



Hematopoietic system	n	%
Anemia	728	17.31
Thrombopenia	344	8.18
Leukopenia	229	5.44
Pancytopenia	76	1.80
Etiology of febrile neutropenia (accompanying hematological malignancies)	13	0.30
Microangiopathic hemolytic anemia	3	0.07
Autoimmune hemolytic anemia	3	0.07
Disseminated intravascular coagulation	3	0.07
Thrombotic thrombocytopenic purpura	2	0.04
Total	1401	33.32

Hematological Complications in 787 Cases of Acute Brucellosis in Eastern Turkey

İmdat DİLEK¹

Ahmet DURMUŞ¹

M. Kasım KARAHOCAGİL²

Hayrettin AKDENİZ²

Hasan KARSEN²

Ali İrfan BARAN²

Ömer EVİRGİN²

Table 1. Clinical and hematological findings observed in the 787 adult cases with brucellosis.

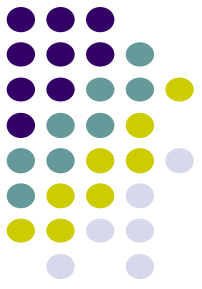
Aim: In this paper, we present the hem

Materials and Methods: Records o
investigated regarding hematological ch

Results: Three hundred sixty-five (46%
(range: 11-78 years). Mean hematolog
leukocyte $6.9 \times 10^9/L$ (0.5-25) and plat
14% of patients had mononuclear cell
were found to have anemia, alone or in
of patients had thrombocytopenia, 12%
0.5% acute hemolysis, and 0.1% disse
and leukopenia and improvement in cl
occurred within 3-4 weeks.

Findings	Case Number (n)	Rate (%)
Fever	136	17
Hepatomegaly	155	20
Splenomegaly	126	16
Lymphadenopathy	26	3
Hepatosplenomegaly	33	4
Anemia	337	43
Thrombocytopenia	111	14
Leukopenia	93	12
Anemia + leukopenia	57	7
Pancytopenia	41	5
Anemia + thrombocytopenia	47	6
Leukopenia + thrombocytopenia	34	4
Acute hemolysis	4	0.5
Disseminated intravascular coagulation	1	0.1

Hemapoetik Sistem Tutulumu

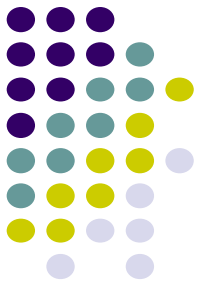


- Hemafagositoz
- Kemik iliğinin granülomatöz tutulumu

- García P, Yrivarren JL, Argumans C, Crosby E, Carrillo C, Gotuzzo E. Evaluation of the bone marrow in patients with brucellosis. Clinico- pathological correlation. Enferm Infecc Microbiol Clin. 1990 Jan;8(1):19-24.
- Crosby E, Hematologic changes in brucellosis. J Infect Dis 1984;150(3):419-24

Brusellozun Komplikasyonları-8

Cilt Tutulumu



Sıklık ~ % 5-10

- Papül,
- Peteşi,
- Purpura,
- Raş,
- Granümatöz vaskülit
- Eritema nodozum

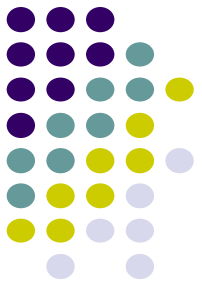


. A brucellosis case with macular rash and peripheral neuropathy.

Mikrobiyol.Bul 2009 Jan;43(1):147-51.

. Allergic vasculitis in brucellosis

Ann.Dermatol Venereol. 1994;121(3):240-1.

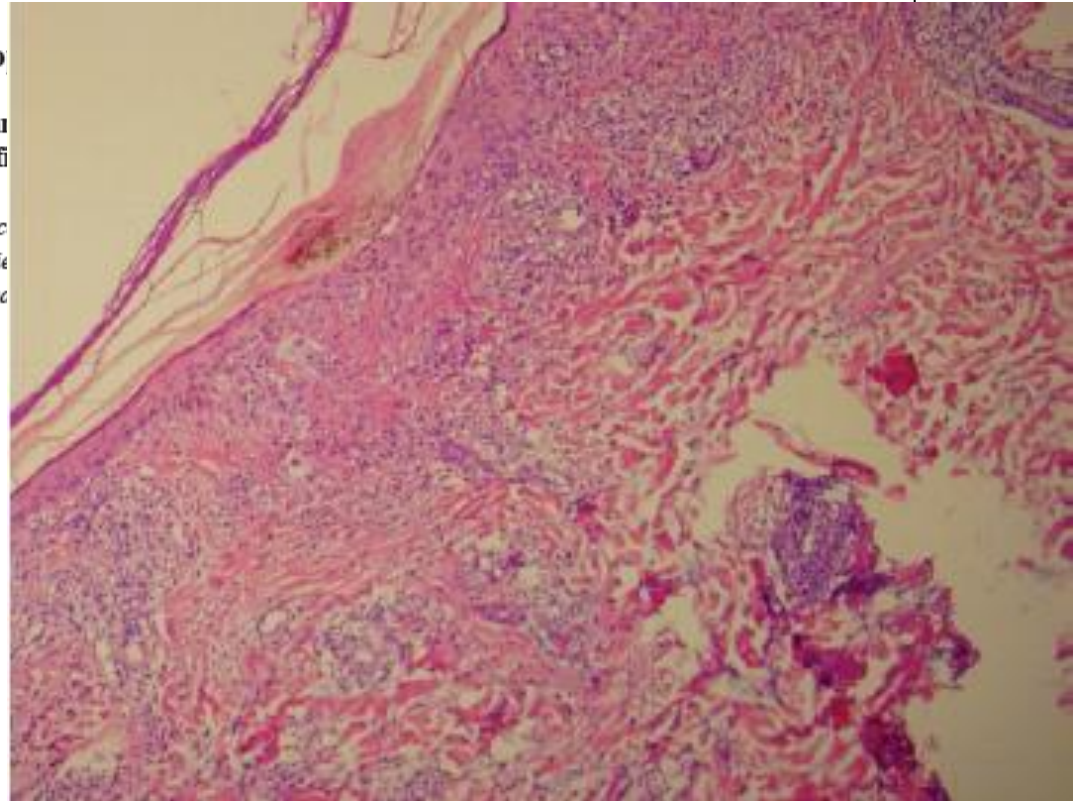


Case Report

Acute Brucellosis with Pancytopenia and Maculo

Abasali Omid¹, Amir Hossein Jafarian¹, Minoo Erfan
Mohammad Javad Yazdanpanah²; Masoud Sharifi

1. Dept. of Pathology, School of Medicine, Mashhad University of Medical Sciences
2. Dept. of Dermatology, School of Medicine, Mashhad University of Medical Sciences
3. Dept. of Internal Medicine, Mashhad University of Medical Sciences, Mashhad



Perivasküler lenfohistiyositik reaksiyon

Brusellozun Komplikasyonları-9

Diğer



MAJOR ARTICLE



Ocular Manifestations Associated with Brucellosis: A 26-Year Experience in Peru

Isaias Rolando,^{1,2} Liset Olarte,² Gustavo Vilchez,² Marina Lluncor,² Larissa Otero,² Mark Paris,^{4,5} Carlos Carrillo,³
and Eduardo Gotuzzo,^{1,2}



Uveit

Konjunktivit

Tiroidit

Mastit

[Mikrobiyol Bul.](#) 2004 Jan-Apr;38(1-2):149-53.

[Case report: A brucellosis case with subacute thyroiditis].



Letter to the Editor

Human mammary abscess caused by *Brucella melitensis*: a case report

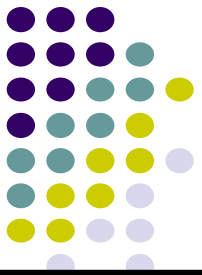
Maria Tsironi,⁽¹⁾ Panagiotis Andriopoulos,⁽¹⁾ Maria Kalkani⁽²⁾ and Giorgos Asimakopoulos⁽¹⁾

Int J Infect Dis 2003; 7: 236

Characteristics of *B. melitensis* versus *B. abortus* bacteraemias.

Dokuzoğuz B, Ergönül O, Baykam N, Esener H, Kiliç S, Celikbaş A, Eren S, Esen B.

The First Infectious Diseases and Clinical Microbiology Clinic, Ankara Numune Education and Research Hospital, Ankara, Turkey.



243 Bruselloz olgusu

54 Bruselloz bakterie

% 83 *B. m*

% 17 *B. a*

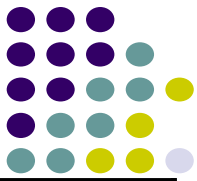
Etken olan suşa göre semptom ve bulguların dağılımı %

Semptom ve Bulgular	<i>B.melitensis</i> n=45	<i>B. abortus</i> n=9	p
Ateş >38°C	71	78	
Artralji	29	78	.009
Sırt ağrısı	22	67	.014
Başağrısı	20	56	-
Terleme	20	-	
Lenfadenopati	2	-	

Characteristics of *B. melitensis* versus *B. abortus* bacteraemias.

Dokuzoğuz B, Ergönül O, Baykam N, Esener H, Kiliç S, Celikbaş A, Eren S, Esen B.

The First Infectious Diseases



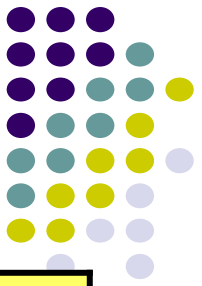
Organ ve Sistem Tutulumlarının dağılımı

	<i>B. melitensis</i> n=45	<i>B. abortus</i> n=9	p
Nörobruselloz	4(%9)	3(%33)	.081
Sakroileit	4(%9)	1(%11)	.834
Endokardit	-	1(%11)	
Epididimo-orşit	1(%2)	-	
Parotit	1(%2)	-	

Characteristics of *B. melitensis* versus *B. abortus* bacteraemias.

Dokuzoğuz B, Ergönül O, Baykam N, Esener H, Kiliç S, Celikbaş A, Eren S, Esen B.

The First Infectious Diseases and Clinical Microbiology Clinic, Ankara Numune Education and Research Hospital, Ankara, Turkey.



Laboratuvar bulgularının dağılımı			
	<i>B. melitensis</i> n=45	<i>B. abortus</i> n=9	
Anemi<12g/dL	26	56	
Lökosit<5000/mm ³	24	44	
Trombosit <150000	13	22	
Pansitopeni	-	11	
↑ AST ve/veya ALT	31	33	



Brusellozda Tedavi

Tedavi

- Makrofajlara penetre olan
- İntrasellüler ve asidik ortamda aktif
- Relapsları önlemek için kombine
- Optimal tedavi süresine uyum



Systematic Review

Seyed Mohammad Alavi (MD) ^{*1}
Leila Alavi (VMD) ²

1- Jundishapur Infectious and
Tropical Diseases Research Center,
Jundishapur University of Medical
Sciences, Ahvaz, Iran.
2- Food and Drug Deputy of

Caspian J Intern Med. 2013 Spring; 4(2): 636-641.
Seyed Mohammad Alavi, Leila Alavi,

Treatment of brucellosis: a systematic review of studies in recent twenty years

Abstract

Background: The treatment of human brucellosis is controversial. The purpose of this study was to search published clinical trial papers to provide a simple and effective treatment in brucellosis.

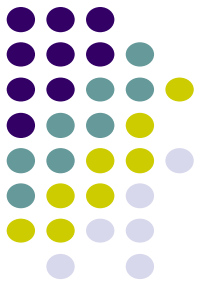
Methods: Many studies on brucellosis treatment in a twenty- year span from 1993 to 2012 were searched in PubMed, Web of Science (ISI), Scopus, Google Scholar, Magiran, Iranmedex and SID. The studies that were searched and classified in groups according to combination therapy and monotherapy and their results in treatment outcome were compared. Regimens with lower treatment failure or relapse were considered as more suitable for brucellosis treatment.

Monoterapide relaps yüksek
4 haftadan kısa rejimlerde relaps yüksek

Bruselloz tedavisinde kullanılan antibiyotikler

Antibiyotik	MIK	Doz	Kombinasyon
Doksisiklin	0.06-1	2x100mg 6 hafta	+Streptomisin +Rifampisin +Gentamisin +Ciprofloksasin
Streptomisin	0.25-16	15/mg/kg 2-3 hafta	Streptomisin+ Doksisiklin Streptomisin+ Doksisiklin +Rifampisin Streptomisin+ Doksisiklin+TMP/SMX
Rifampin	0.1-2	1200mg/g 6hafta	Rifampisin + Doksisiklin +Streptomisin Rifampisin + Doksisiklin +TMP/SMX Rifampisin +Kinolon
Gentamisin	0.25-2	5mg/kg/g 5-7gün	Gentamisin + Doksisiklin
Ofloksasin	0.1-2	2x400mg/g 6hafta	Rifampisin + Ofloksasin
Ciprofloksasin	0.25-1	2x500mg/g 6hafta	Ciprofloksasin + Doksisiklin Ciprofloksasin + Rifampisin
TMP/SXT	0.38-8	2xforte tab/g 6hafta	TMP/SMX + Rif + Doksisiklin TMP/SMX + Streptomisin+ Doksisiklin

WHO-1986



- Doksisisiklin 6 hafta
- Streptomisin 2-3 hafta
- Doksisisiklin 6 hafta
- Rifampisin 6 hafta

Possible implications of doxycycline-rifampin interaction for treatment of brucellosis.

Colmenero JD Antimicrob Agents Chemother 1994

Sonuç: Rifampisin doksisisiklin serum düzeyini düşürüyor.

Doksisiklin + streptomisin tedavisinde relaps ve tedavi başarısızlığı oranları

Çalışma	Tedavi başarısızlığı %	Relaps oranı %
Solera	2	5.3
Hashemi	4.6	4.6
Bayındır	10	0
Roushan	11	6.1
Roushan	7.4	3.2
Ersoy	9.7	9.7

Solera J, Antimicrob Agents Chemother. 1995;39:2061-7
 Hashemi SH, Int J Infect Dis. 2012;16:e247-51
 Bayindir Y, J Chemother. 2003;15:466-71.
 Roushan MR, J Antimicrob Chemother. 2010;65:1028-35.
 Roushan MR, Pediatr Infect Dis J. 2006;6:544-5
 Ersoy Y, Trop Doct. 2005;35:210-12.

Doksisiklin + rifampisin tedavisinde relaps ve tedavi başarısızlığı oranları

Çalışma	Tedavi başarısızlığı %	Relaps oranı %
Solera	8	16
Bayındır	15	10
Akova	3.3	3.3
Ranjbar	11.8	9.3
Agalar	3.8	10
Karabay	3.1	14.3
Alavi	9.8	11.7

Solera J, Antimicrob Agents Chemother. 1995;39:2061-7
 Bayindir Y, J Chemother. 2003;15:466-71
 Akova M, Antimicrob Agents Chemother. 1993;37:1831-4.
 Ranjbar M, Int J Infect Dis. 2007;11:152-6
 Agalar C, Eur J Clin Microbiol Infect Dis . 1999;18:535-8
 Karabay O, BMC Infect Dis. 2004;4:18
 Alavi SM, Ahvaz. Pak J Med Sci. 2007;23:358-60.

Treatment of Human Brucellosis with Doxycycline and Gentamicin

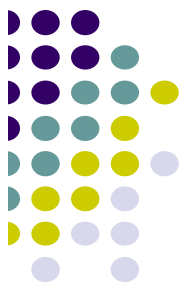
JAVIER SOLERA,^{1†*} ALFREDO ESPINOSA,^{1†} ELISA MARTÍNEZ-ALFARO,^{1†} LORENZO SÁNCHEZ,^{2†}
PALOMA GEJO,^{3†} ELENA NAVARRO,^{1†} JULIO ESCRIBANO,^{4†} AND JOSÉ ANTONIO FERNÁNDEZ^{4†}

Department of Medicine, Unit of Infectious Diseases, Albacete General Hospital, Albacete,¹ Department of Medicine, Guadalajara Hospital, Guadalajara,² Department of Medicine, Unit of Infectious Diseases, Cuenca Hospital, Cuenca,³ and Instituto de Desarrollo Regional, Division of Biotechnology, University of Castilla La Mancha,⁴ Spain

Received 21 June 1996/Returned for modification 12 September 1996/Accepted 19 October 1996

- 17 olgu
- Doksisisiklin 45 gün
- Gentamisin 7 gün
- Relaps % 5.9

- 35 olgu
- Doksisisiklin 30 gün
- Gentamisin 7 gün
- Relaps % 22.9



A Randomized, Double-Blind Study to Assess the Optimal Duration of Doxycycline Treatment for Human Brucellosis

Javier Solera,¹ Paloma Geijo,² Jose Largo,⁴ Manuel Rodriguez-Zapata,⁴ Julio Gijón,⁷ Elisa Martinez-Alfaro,¹ Elena Navarro,² and Miguel Angel Macia⁶, for the Grupo de Estudio de Castilla-La Mancha de Enfermedades Infecciosas (GECMEI)*

¹Servicio de Medicina Interna and ²Unidad de Investigación, Hospital General Universitario, Albacete, ³Unit of Infectious Diseases, Hospital Virgen de la Luz, Cuenca, ⁴Servicio de Medicina Interna, Hospital Virgen de la Salud, and ⁵Servicio de Epidemiología Consejería de Sanidad, Junta de Castilla La Mancha, Toledo, ⁶Servicio de Medicina Interna, Hospital General Universitario, Guadalajara, and ⁷Servicio de Medicina Interna, Complejo Hospitalario, Ciudad Real, Spain

Downloaded 1

Clinical Infectious Diseases 2004

- 73 olgu
- Doksisisiklin 45 gün
- Gentamisin 7 gün
- Relaps % 12.33

- 73 olgu
- Doksisisiklin 30 gün
- Gentamisin 7 gün
- Relaps % 20.55

Comparison of the efficacy of gentamicin for 5 days plus doxycycline for 8 weeks versus streptomycin for 8 weeks plus doxycycline for 45 days in the treatment of human brucellosis: a randomized clinical trial.

Roushan MR, Amiri MJ, Janmohammadi N, Hadad MS, Javanian M, Baiani M, Bijani A.

Infectious Diseases Research Center, Babol Medical University, Babol, Iran. hagar2q@yahoo.ca



MAJOR ARTICLE

Clinical Infectious Diseases 2006

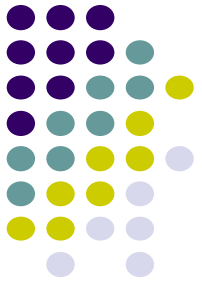
Efficacy of Gentamicin plus Doxycycline versus Streptomycin plus Doxycycline in the Treatment of Brucellosis in Humans

- Doksisisiklin 45 gün
- Streptomisin 14 gün

- Doksisisiklin 30 gün
- Gentamisin 5- 7 gün
- Relaps oranları benzer
- Yan etki ve maliyet az

reportedly associated with fewer relapses.

Methods. This prospective, randomized study employed doxy for 45 days) in combination with either streptomycin (1 g admin



Doksisiklin + gentamisin tedavisinde relaps ve tedavi başarısızlığı oranları

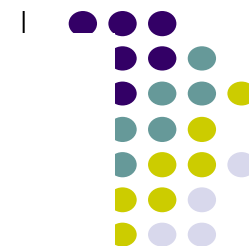
Çalışma	Tedavi başarısızlığı %	Relaps oranı %
Hashemi	10.8	12.3
Roushan	4.9	2.4
Roushan	5.1	3.1
Solera	0	5.9

Hashemi SH, Int J Infect Dis. 2012;16:e247-51

Roushan MR, J Antimicrob Chemother. 2010;65:1028-35

Roushan MR, Clin Infect Dis. 2006;42:1075-80

Solera J, J Infect. 1998;36:85-92.



Quinolones for brucellosis: treating old diseases with new drugs

G. Pappas¹, L. Christou², N. Akritidis² and E. V. Tsianos¹

Table 1. Pooled data from clinical studies utilising quinolones for the treatment of brucellosis

Regimen used	Existing data and reference	Pooled data
Ciprofloxacin only, dosage varying	14 patients, 3 failures [10] 6 patients, 5 failures [12] 16 patients, 4 failures [11]	36 patients, 12 failures (33%)
Ciprofloxacin and doxycycline, usual doses	2 patients, no failures [7] 3 patients, no failures [10] 5 patients, no failures [4]*	5 patients, no failures (0%) (excluding *, treated for 3 months)
Ofloxacin and rifampicin, usual doses	27 patients, 2 failures [8] 15 patients, 2 failures [5] 19 patients, 10 failures [6] 31 patients, 1 failure [15]	92 patients, 15 failures (16%)
Ciprofloxacin and rifampicin, usual doses	5 patients, 1 failure [10] 20 patients, 3 failures [9] (30-day regimen, same as control arm)	25 patients, 4 failures (16%)
Ciprofloxacin and streptomycin, usual doses	3 patients, 1 failure [10]	3 patients, 1 failure (33%)
Pefloxacin in various combinations, usual doses	5 patients, no failures [10]	5 patients, no failures (0%)
Ofloxacin monotherapy	Not available	Failure 16% [13] [14],



In Vitro Activities of Antibiotics Alone and in Combination against *Brucella melitensis* at Neutral and Acidic pHs

MURAT AKOVA,* DENİZ GÜR,† DAVID M. LIVERMORE,‡ TANIL KOCAGÖZ,§
AND H. ERDAL AKALIN||

- Kinolonlar asit pH da etkin çalışmıyor
- Rifampisin ile sinerjistik etkisi düşük

Brucella melitensis is a major cause of zoonotic disease. The aim of this study was to determine the in vitro activities of antibiotics against *Brucella melitensis* at neutral and acidic pHs. The results showed that the activity of antibiotics against *Brucella melitensis* was significantly higher at neutral pH than at acidic pH. Regardless of pH, azithromycin-rifampin and ofloxacin-rifampin showed less synergy than established streptomycin-doxycycline and rifampin-doxycycline combinations.

Brucellosis occurs worldwide but is most frequent in the Mediterranean basin and South America (13). Because the bacteria are intracellular, successful treatment requires antibiotics with good cellular penetration: combinations of doxycycline with either rifampin or an aminoglycoside usually are effective, but administration for 6 weeks is required and no

ma), ofloxacin (Hoechst Marion Roussel, Istanbul, Turkey), ciprofloxacin (Bayer, Istanbul, Turkey), erythromycin (Sigma), and azithromycin (Pfizer, Istanbul, Turkey) were determined by microdilution. Mueller-Hinton broth (Oxoid, Basingstoke, Hants, United Kingdom), supplemented with 1% Polivitex (Difco-Mediatech, Miami, FL) and adjusted to pH 7.0

Perspectives for the Treatment of Brucellosis in the 21st Century: The Ioannina Recommendations

Javier Ariza, Mile Bosilkovski, Antonio Cascio, Juan D. Colmenero, Michael J. Corbel, Matthew E. Falagas, Ziad A. Memish, Mohammad Reza Hasanjan Roushan, Ethan Rubinstein, Nikolaios V. Sipsas, Javier Solera, Edward J. Young, Georgios Pappas*

Brucellosis is probably the commonest anthropozoonotic infection worldwide [1–3], but remains in various aspects an enigma in the 21st century [4]. *Brucella melitensis* remains the major cause of human disease worldwide, followed by *B. abortus* and *B. suis*, while rare but persisting cases of *B. canis* human infection and disease by novel *Brucella* pathogens of marine mammals have also emerged. The disease is re-emerging as a significant cause of travel-related disease [5] and represents an index of poor socioeconomic status (Figure 1). Its treatment is largely based even today on the principles applied half a century ago by pioneer researchers [6] and few modifications have been made in the

Summary Points

- Brucellosis remains the commonest anthropozoonosis worldwide, and its treatment remains complex, requiring protracted administration of more than one antibiotic.
- In November 2006, a consensus meeting aimed at reaching a common specialist statement on the treatment of brucellosis was held in Ioannina, Greece under the auspices of the International Society of Chemotherapy and the Institute of Continuing Medical Education of Ioannina.
- The author panel suggests that the optimal treatment of uncomplicated brucellosis should be based on a six-week regimen of doxycycline combined either with streptomycin for

Competing Interests: ER has received research grants from Daiichi, Bayer, and Theravance and has served as a consultant to Pfizer, Theravance, Bayer, Wyeth, Rosetta, and Biodivax. The other authors have declared that they have no competing interests.

Citation: Ariza J, Bosilkovski M, Cascio A, Colmenero JD, Corbel MJ, et al. (2007) Perspectives for the treatment of brucellosis in the 21st century: The Ioannina recommendations. PLoS Med 4(12): e317. doi:10.1371/journal.pmed.0040317

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Abbreviations: DOX-GENT, doxycycline-gentamicin; DOX-RIF, doxycycline-rifampin; DOX-STR, doxycycline-streptomycin; MRI, magnetic resonance imaging; TMP-SMX, trimethoprim-sulfamethoxazole; WHO, World Health Organization

Javier Ariza is with the Servicio de Enfermedades Infecciosas, Hospital de Bellvitge, Universitat de

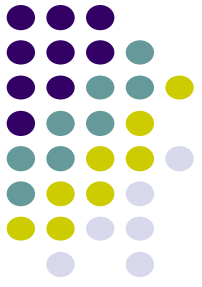




Table 2. The recommendations of Ioannina on the Optimal Treatment of Brucellosis Without Serious Complications in Adults

Treatment Regimen	Dose	Recommendation Validation	Comments
DOX-STR	DOX: 100 mg twice daily orally for 6 weeks; STR: 15 mg/kg daily intramuscularly for 2–3 weeks	AI	Considered the “gold standard.”
DOX-RIF	DOX: as above; RIF: 600–900 mg daily for 6 weeks, one morning dose	AI	Convenience of the regimen overcomes slight drawbacks concerning the pharmacokinetics of the combination and the overall outcome.
DOX-GENT	DOX: as above; GENT: 5 mg/kg daily parenterally in 1 dose for 7 days	BI	May be considered the preferred alternative regimen. Duration of GENT administration may need modification for optimal result (different studies suggest that it may be shortened to 5 days or extended to 14 days).
TMP-SMX-containing regimens	TMP-SMX: 800 + 160 mg twice daily for 6 weeks	CII	Recommendation referring to three-drug regimens containing DOX.
Quinolone-containing combination regimens	Ofloxacin: 400 mg twice daily for 6 weeks; ciprofloxacin: 500 mg twice daily for 6 weeks	CII	Ofloxacin or ciprofloxacin may be used alternatively as second or third agents in combination regimens containing DOX.

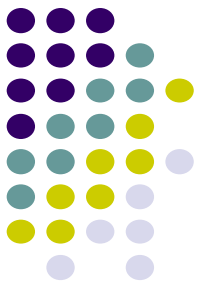
Kinalon İçeren Rejimlerde Tedavi Başarısızlığı ve Relaps



Çalışma	Tedavi başarısızlığı %	Relaps oranı %
Hashemi	4.6	4.6
Bayındır	26	26
Keramat	8	8.3
Akova	3.2	3.2
Agalar	10	15
Karabay	13.3	13.3
Ersoy	15	15

Hashemi SH, Int J Infect Dis. 2012;16:e247-51.
Bayindir Y, J Chemother. 2003;15:466-71
Keramat F, Trop Doct. 2009;39:207-10 .
Akova M, Antimicrob Agents Chemother.
1993;37:1831-4
Agalar C, Eur J Clin Microbiol Infect Dis .
1999;18:535-8
Karabay O, BMC Infect Dis. 2004;4:18
Ersoy Y, Sonmez E, Trop Doct. 2005;35:210-12.

Nörobruselloz Tedavisi



- Doksisiklin
- Rifampisin (600 - 900mg / gün)
- Seftriakson (2x 2gr / gün)
 - *B. melitensis* e in-vitro aktivitesi iyi
 - BOS da yüksek konsantrasyona ulaşmakta
- Streptomisin
 - ☹ BOS penetrasyonu yok
 - ☹ potansiyel nörotoksik

sorunlu

Neurobrucellosis: clinical, diagnostic, therapeutic features and outcome. Unusual clinical presentations in an endemic region

Authors

Nurgul Ceran¹
Recai Turkoglu²
Ilknur Erdem¹
Asuman Inan¹
Derya Engin¹
Hulya Tireli²

ABSTRACT

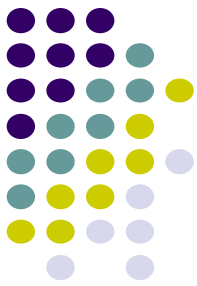
Brucellosis is a zoonotic infection and has endemic characteristics. Neurobrucellosis is an uncommon complication of this infection. The aim of this study was to present unusual clinical manifestations and to discuss the management and outcome of a series of 18 neurobrucellosis cases. Initial clinical manifestations consist of *pseudotumor cerebri* in one case, white matter lesions and demyelinating syndrome in three cases, intracranial granuloma in one case, transverse myelitis in two

Doksisiklin ve rifampisin kombinasyonda kesin yer almalı

Sefriakson, ko- trimaksazol, ciprofloksasin kombinasyonda 3 ajan olarak yer alabilir

Numune Training and
Research Hospital, Istanbul,
Turkey

ter mind sequelae including aphasia, hearing loss, hemiparesis, incontinence, and even mortality) is rare in neurobrucellosis, its sequelae are significant. In neurobrucellosis various clinical and neuroradiologic signs and symptoms can be confused with other neurologic diseases. In inhabitants



Neurobrucellosis: Clinical and Diagnostic Features

Tumer Guven,¹ Kenan Ugurlu,² Onder Ergonul,³ Aysel Kocagul Celikbas,⁴ Sebnem Eren Gok,⁴ Selcuk Comoglu,⁵ Nurcan Baykam,⁴ and Basak Dokuzoguz⁴

¹Infectious Diseases and Clinical Microbiology Clinic, Ataturk Training and Research Hospital, Ankara, ²Infectious Diseases and Clinical Microbiology Clinic, 25 Aralik Community Hospital, Gaziantep, ³School of Medicine, Infectious Diseases and Clinical Microbiology Department, Koç University, Istanbul; ⁴Infectious Diseases and Clinical Microbiology Clinic, Ankara Numune Training and Research Hospital, and ⁵Neurology Clinic, Dışkapı Yıldırım Beyazıt Training and Research Hospital, Ankara, Turkey

48 nörobruselloz olgusu

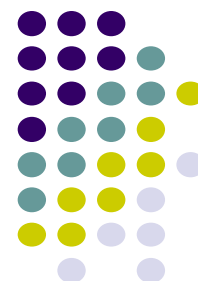
- 39 olgu

Seftriakson +rifampisin 3 hafta

Rifampisin + doksisisiklin ile 6 aya tamamlandı

- 9 olgu

Rifampisin + doksisisiklin 6 ay



Efficacy and Tolerability of Antibiotic Combinations in Neurobrucellosis:

Results of the | ABSTRACT

Go to:

[Hakan Erdem,[✉] Ayşe Yetkin,⁹ Mustafa Kem Seza Inal,^m Saygın Nadeva-Bartolome,³ Ba Kenan Uğurlu,^y Başak Serhat Unal,^{dd} Saim D Behice Kurtaran,^m Oğ](#)

No data on whether brucellar meningitis or meningoencephalitis can be treated with oral antibiotics or whether an intravenous extended-spectrum cephalosporin, namely, ceftriaxone, which does not accumulate in phagocytes, should be added to the regimen exist in the literature. The aim of a study conducted in Istanbul, Turkey, was to compare the efficacy and tolerability of ceftriaxone-based antibiotic treatment regimens with those of an oral treatment protocol in patients with these conditions. This retrospective study enrolled 215 adult patients in 28 health care institutions from four different countries. The first protocol (P1) comprised ceftriaxone, rifampin, and doxycycline. The second protocol (P2) consisted of trimethoprim-sulfamethoxazole, rifampin, and doxycycline. In the third protocol (P3), the patients started with P1 and transferred to P2 when ceftriaxone was stopped. The treatment period was shorter with the regimens which included ceftriaxone (4.40 ± 2.47 months in P1, 6.52 ± 4.15 months in P2, and 5.18 ± 2.27 months in P3) ($P = 0.002$). In seven patients, therapy was modified due to antibiotic side effects. When these cases were excluded, therapeutic failure did not differ significantly between ceftriaxone-based regimens ($n = 5/166$, 3.0%) and the oral therapy ($n = 4/42$, 9.5%) ($P = 0.084$). The efficacy of the ceftriaxone-based regimens was found to be better ($n = 6/166$ [3.6%] versus $n = 6/42$ [14.3%]; $P = 0.017$) when a composite negative outcome (CNO; relapse plus therapeutic failure) was considered. Accordingly, CNO was greatest in P2 (14.3%, $n = 6/42$) compared to P1 (2.6%, $n = 3/117$) and P3 (6.1%, $n = 3/49$) ($P = 0.020$). Seemingly, ceftriaxone-based regimens are more successful and require shorter therapy than the oral treatment protocol.

Management of *Brucella* endocarditis: results of the Gulhane study

[Suda Tekin Koruk](#), [Hakan Erdem](#), [Ibrahim Koruk](#), [Ayşe Erbay](#), [Yasemin Tezer-Tekce](#), [Ali Rıza Erbay](#), [Saim Dayan](#), [Ozcan Deveci](#), [Asuman Inan](#), [Derya Ozturk Engin](#), [Rahmet Guner](#), [Nebahat Dikici](#), [Elif Doyuk-Kartal](#), [Behice Kurtaran](#), [Filiz Pehlivanoglu](#), [Oquz Resat Sipahi](#), [Aysun Yalci](#), [Mucahit Yemisen](#), [Sema Alp-Cavus](#), [Serap Gencer](#), [Gokhan Guzel](#), [Oral Oncul](#), [Mehmet Parlak](#), [Esra Kazak](#), [Necla Tulek](#), [Asim Ulcay](#), [Umit Savasci](#)

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Volume 40, Issue 2, Pages 145-150, August 2012

- 2006 - 2011
- 19 merkez, 53 hasta (7 olgu mortal seyretmiş)
- (Grup 1); Seftriakson +oral antibiyotikler - mortalite % 15 (3/20),
- (Grup 2); aminoglikozid + oral antibiyotikler- mortalite % 5.3 (2/19)
- (Grup 3); oral antibiyotik kombinasyonları- mortalite % 25 (3/12)
- (Grup 4); Aminoglikozid + seftriakson+ 1 oral antibiyotik -mortalite (0/2)
- 32 hastada (% 60.4) medikal tedavi ile cevap alınmış
- 21 hastada (% 39.6) medikal + cerrahi tedavi

***Brucella* endocarditis in prosthetic valves**

Sascha Al Dahouk MD¹, Thomas Schneider MD², Andreas Jansen MD³, Karsten Nöckler DVM⁴, Herbert Tomaso MD¹, Ralf M Hagen MD¹, Holger C Scholz PhD¹, Martin Rudwaleit MD², Heinrich Neubauer DVM¹, Andreas J Morguet MD⁵

Prostatik kapak endokarditinde

Tek başına medikal tedavi yetersiz

Mutlaka kapak replasmanı gerekli



İlginiz için Teşekkür Ederim