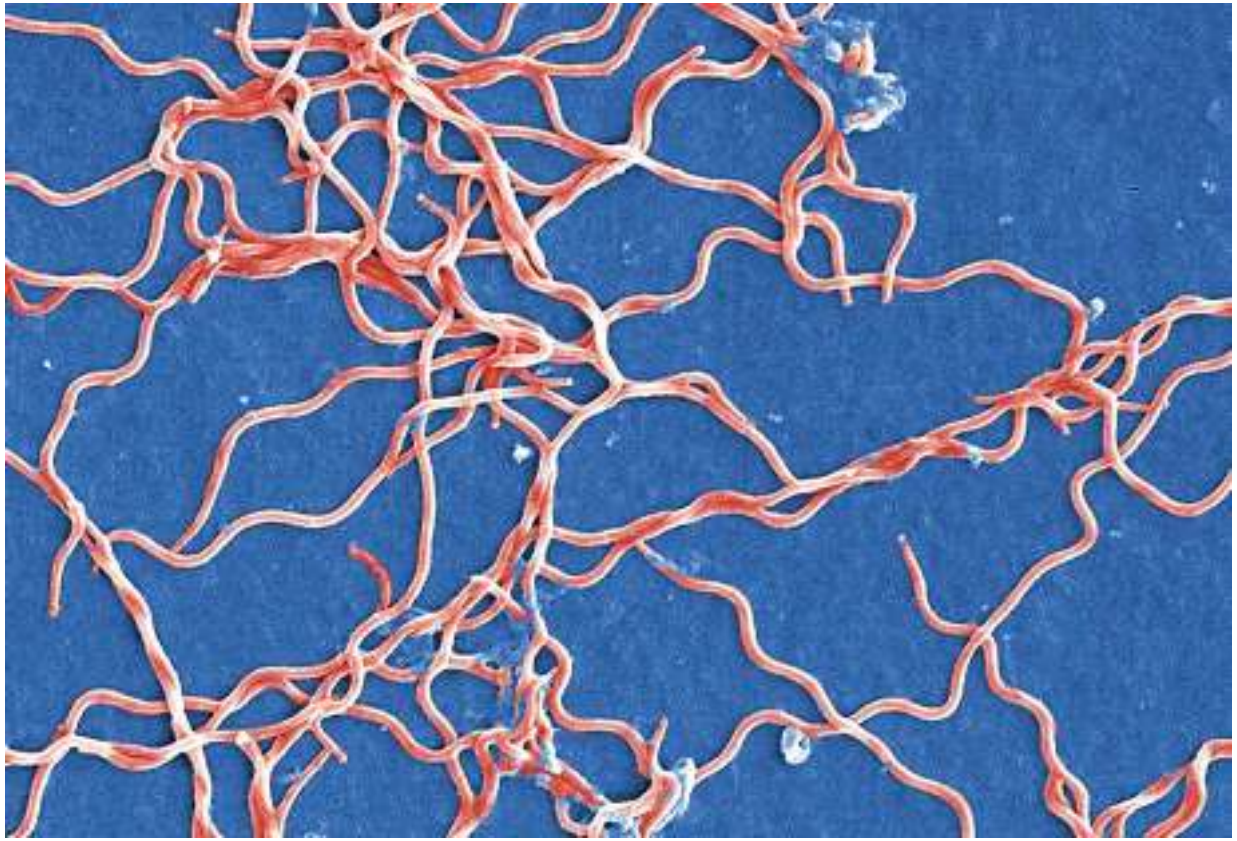


2018 KASIM ANKARA

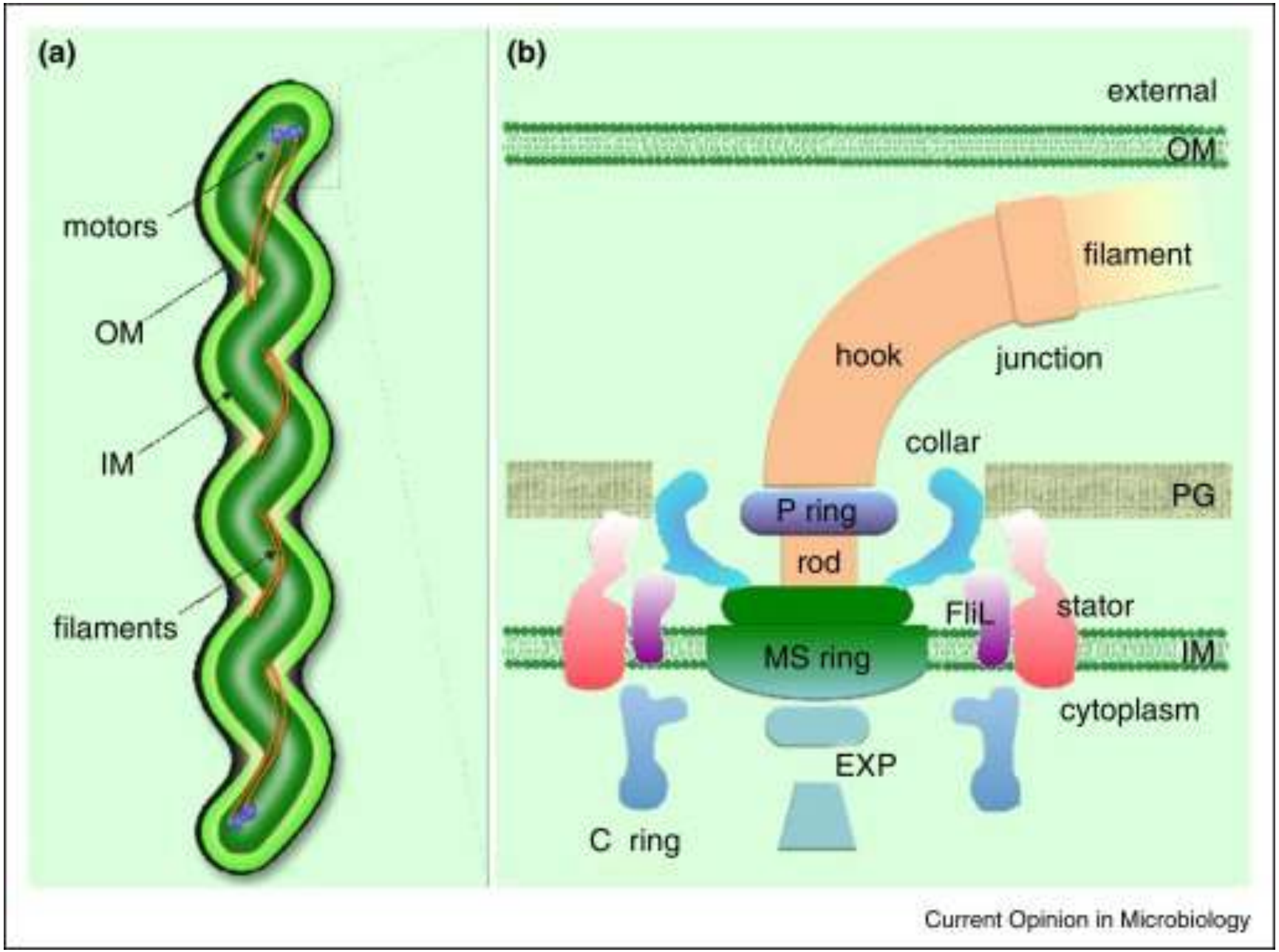
LYME HASTALIĞI

SUNUM

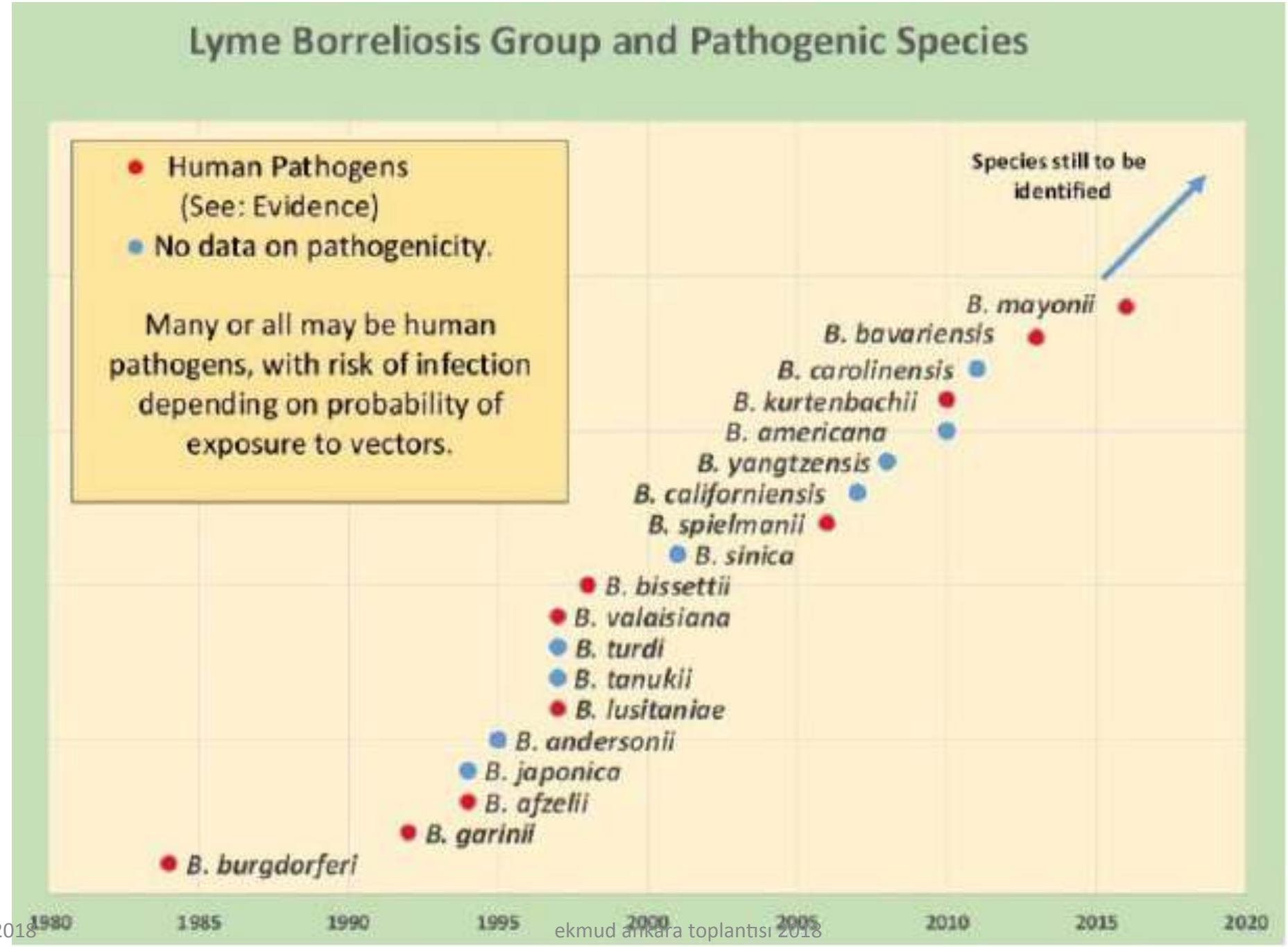
- ETKEN PATOJEN
- EPİDEMİYOLOJİ
- KLİNİK
- TANI VE TEDAVİ

BORRELİA BURGDORFERİİ

- Spiroket ailesinden borrelia genusundan (borrelia burgdorferii, relapsing fever)
- 1982 yılında Willy burgdorferii tarafından izole edildi.
- Barbour stonner kelly besiyerinde 2-4 haftada ürer
- İnsanlara vektörler aracılığı ile bulaşır.



SPİROKET MORFOLOJİSİ:
Lyme borreliyoz: 3 mikron eninde
15-20 mikron boyunda


Lyme Borreliosis Group and Pathogenic Species
Human Pathogens
(See: Evidence)
No data on pathogenicity.
Many or all may be human pathogens, with risk of infection depending on probability of exposure to vectors.
Species still to be identified
B. mayonii
B. bavariensis
B. carolinensis
B. kurtenbachii
B. americana
B. yangtzensis
B. californiensis
B. spielmanii
B. sinica
B. bissettii
B. valaisiana
B. turdi
B. tanukii
B. lusitaniae
B. andersonii
B. japonica
B. afzelii
B. garinii
B. burgdorferi
1980
1985
1990
1995
2000
2005
2010
2015
2020

Distribution of Lyme disease

ITC UNIVERSITY OF TWENTE.

Irene Garcia-Marti
PHD Student en Faculty of Geo-Information Science and Earth Observation (ITC) of the University of Twente , 2014

Tick identification can help characterize disease risk

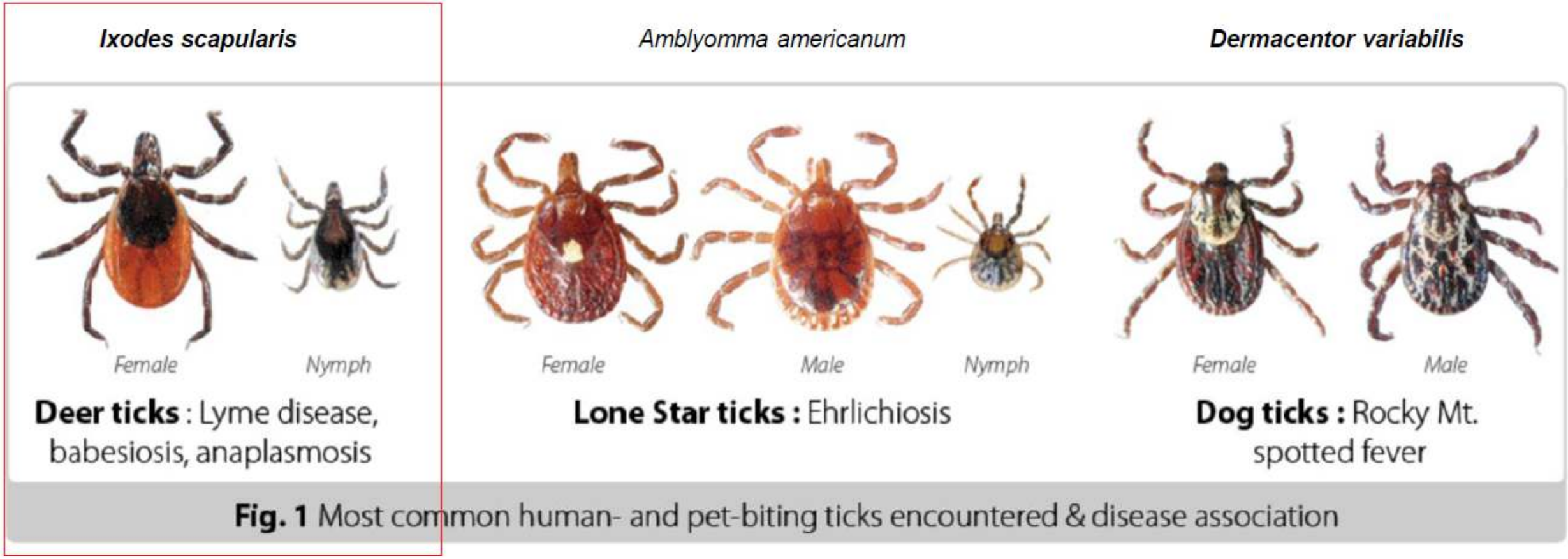
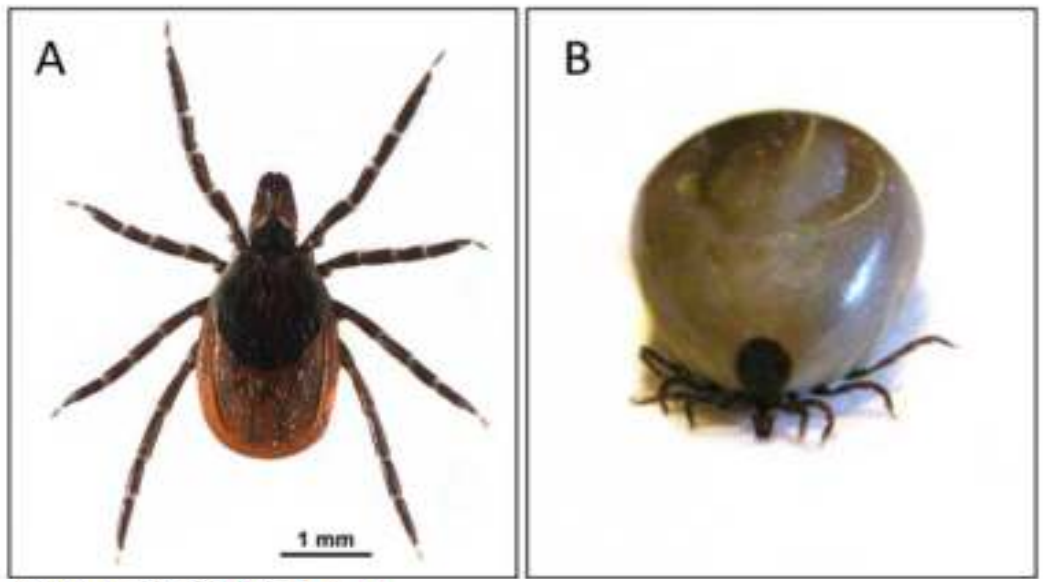


Fig. 1 Most common human- and pet-biting ticks encountered & disease association

IXODES CİNSİ KENELER TAŞIYOR

Host	No. of hosts	No. of ticks collected	No. of ticks PCR pos. (%)
Cat, *Felis catus*	4	4	1 (25)
Dog, *Canis lupus familiaris*	29	30	10 (33)
Human, *Homo sapiens*	8	8	4 (50)
Total	41	42	15 (36)

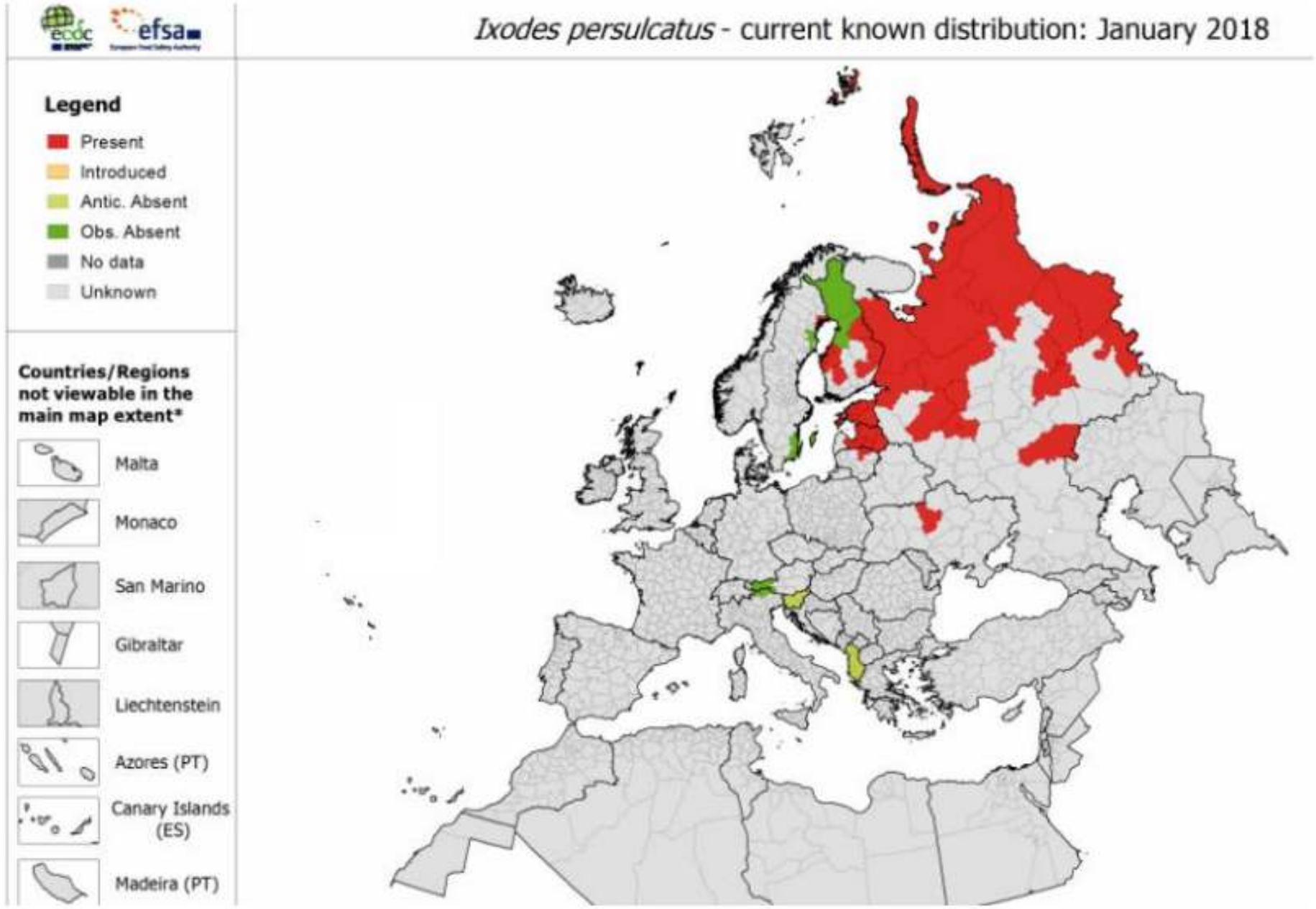


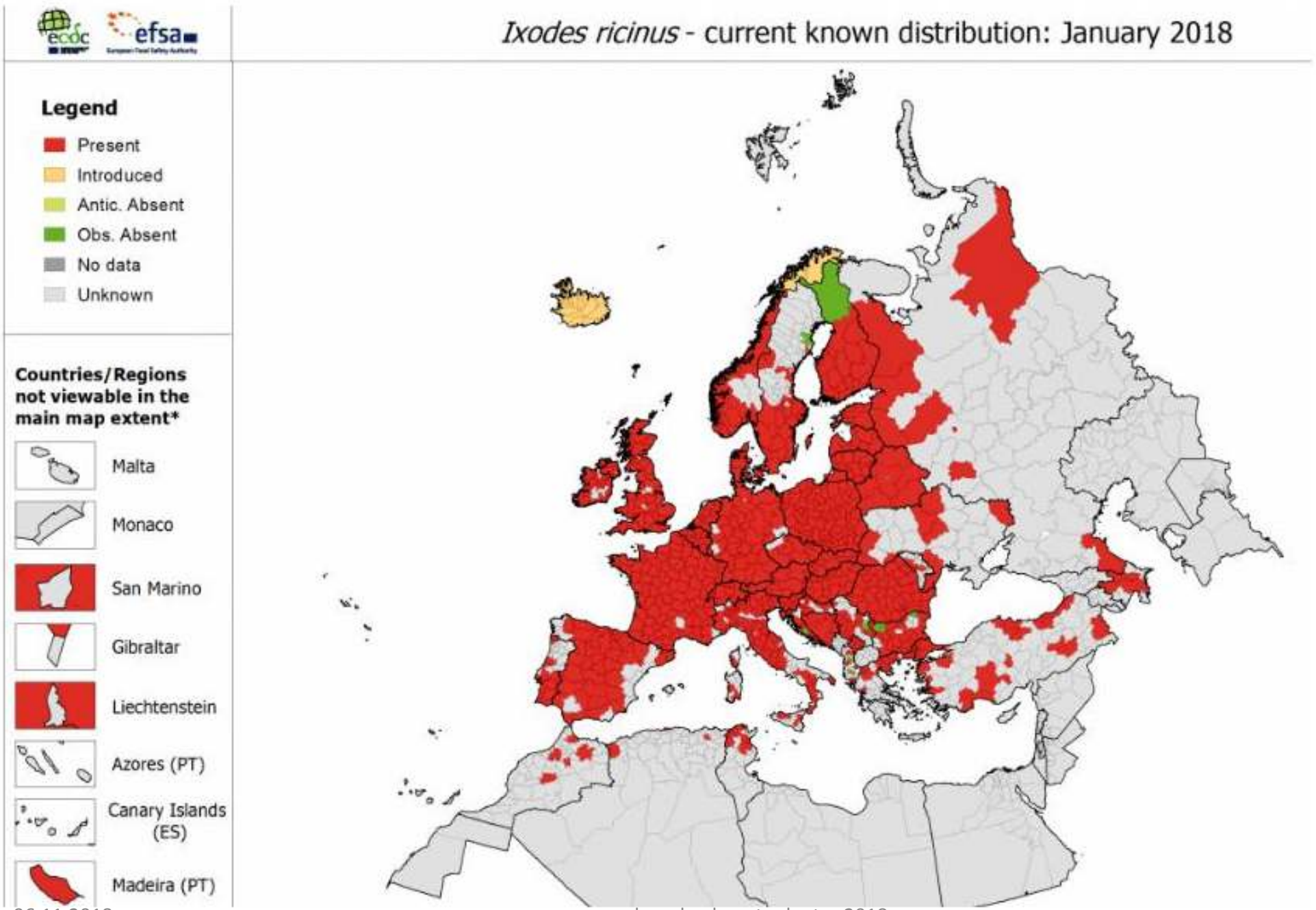
IVYSPRING INTERNATIONAL PUBLISHER
International Journal of Medical Sciences
2017; 14(2): 150-158. doi: 10.7150/ijms.17763

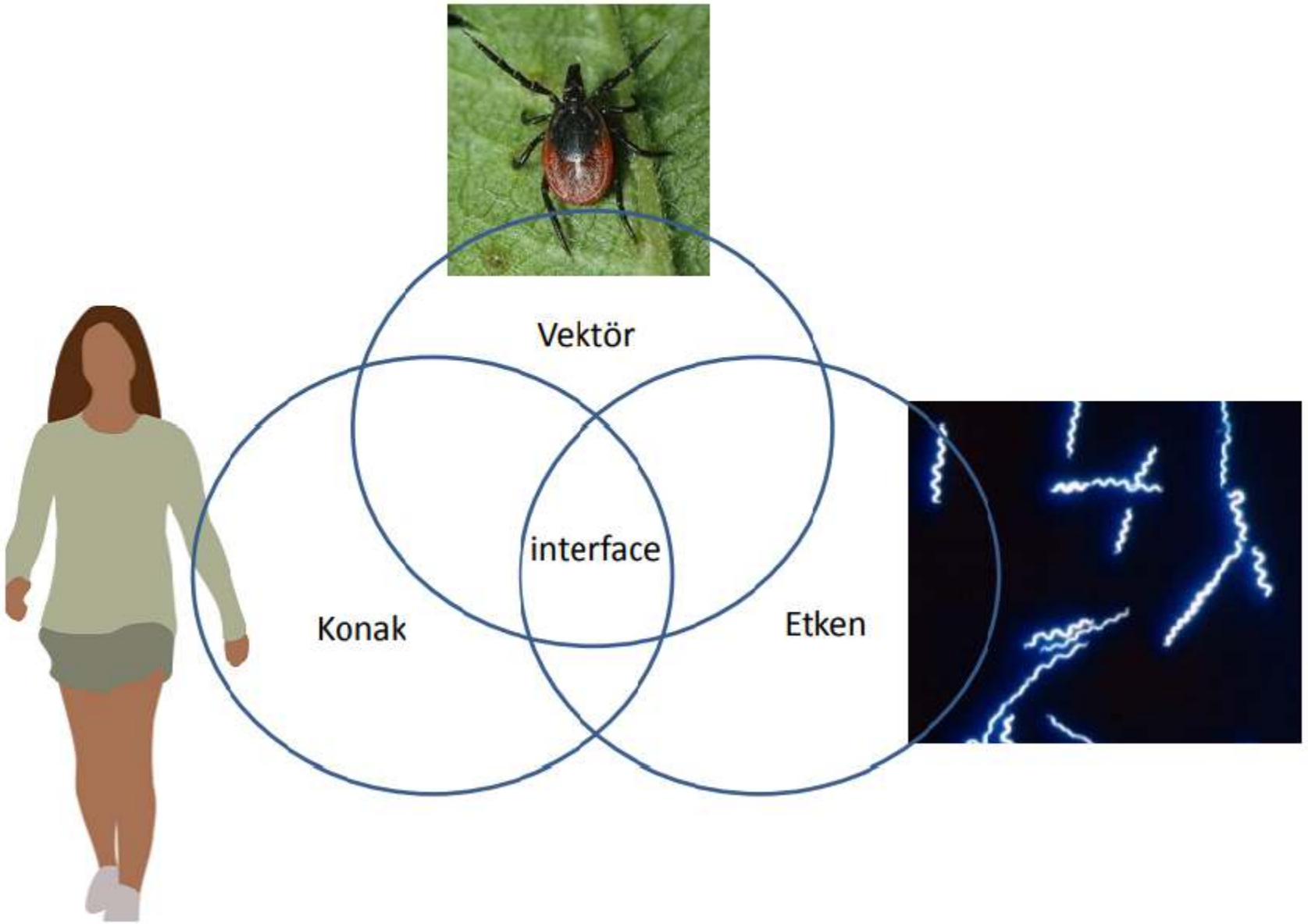
Research Paper

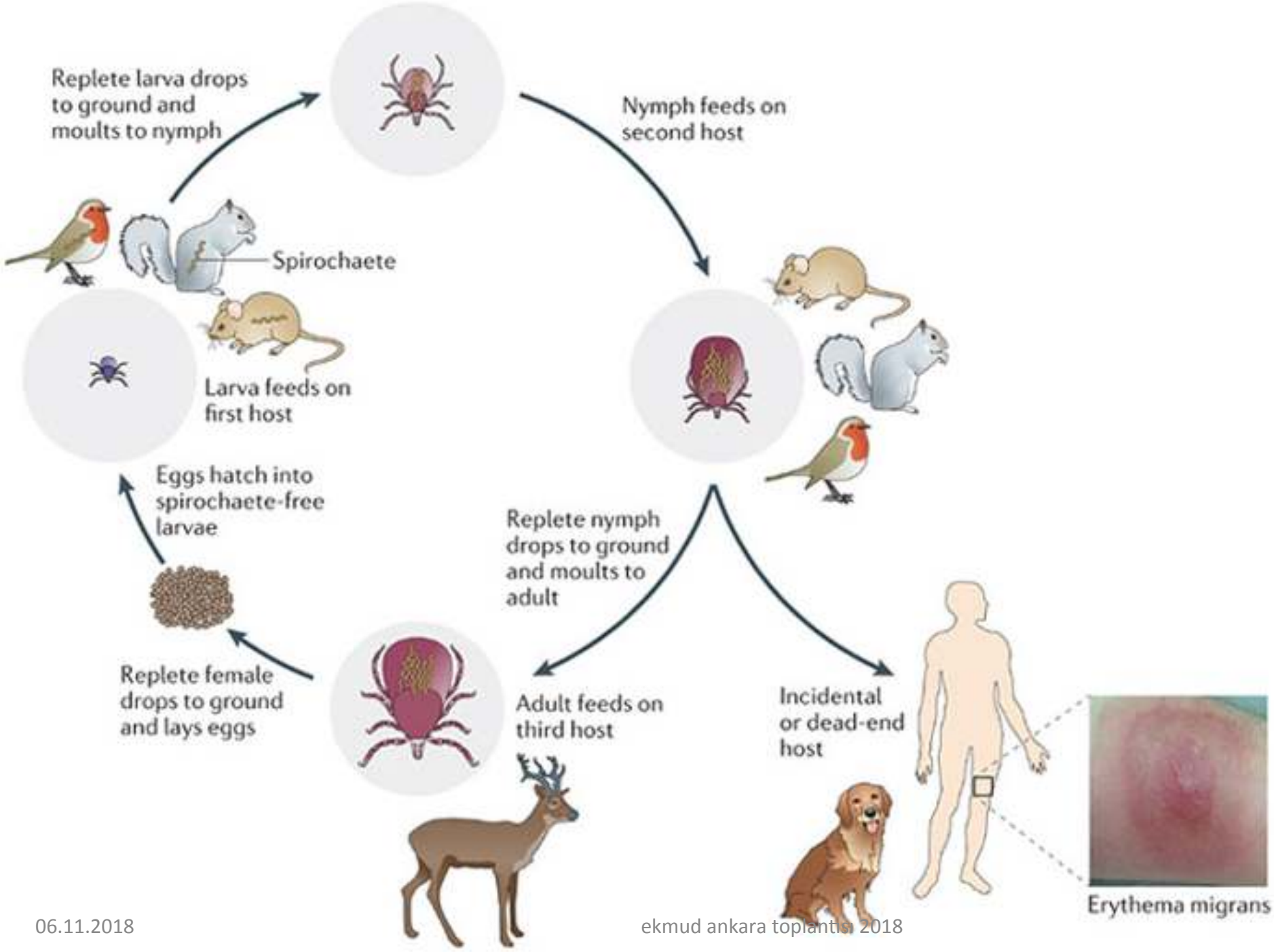
Detection of Lyme Disease Bacterium, *Borrelia burgdorferi* sensu lato, in Blacklegged Ticks Collected in the Grand River Valley, Ontario, Canada

John D. Scott[1], Janet E. Foley[2], John F. Anderson[3], Kerry L. Clark[4], Lance A. Durden[5]


ecdc
efsa
Ixodes persulcatus - current known distribution: January 2018
Legend
Present
Introduced
Antic. Absent
Obs. Absent
No data
Unknown
Countries/Regions not viewable in the main map extent*
Malta
Monaco
San Marino
Gibraltar
Liechtenstein
Azores (PT)
Canary Islands (ES)
Madeira (PT)


ecdc
efsa
Ixodes ricinus - current known distribution: January 2018
Legend
Present
Introduced
Antic. Absent
Obs. Absent
No data
Unknown
Countries/Regions not viewable in the main map extent*
Malta
Monaco
San Marino
Gibraltar
Liechtenstein
Azores (PT)
Canary Islands (ES)
Madeira (PT)

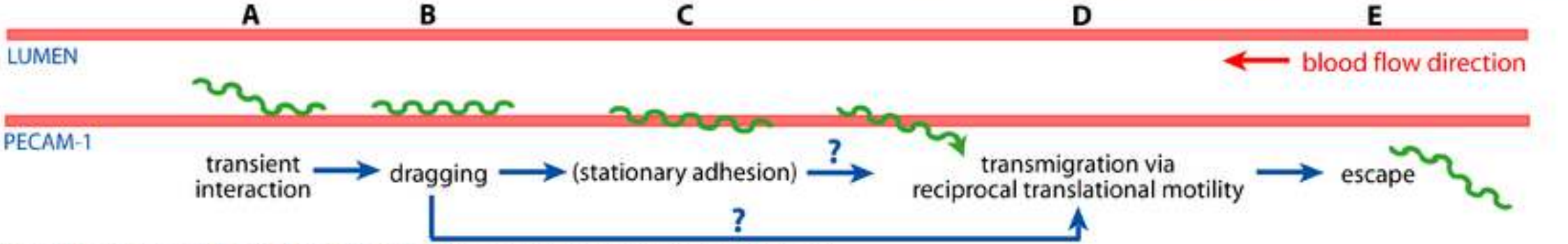

Vektör
interface
Konak
Etken


Replete larva drops to ground and moults to nymph
Nymph feeds on second host
Spirochaete
Larva feeds on first host
Eggs hatch into spirochaete-free larvae
Replete nymph drops to ground and moults to adult
Replete female drops to ground and lays eggs
Adult feeds on third host
Incidental or dead-end host
Erythema migrans

Lyme borrelia: keneden giriş, lokal, yayılım, immun cevaptan kaçma

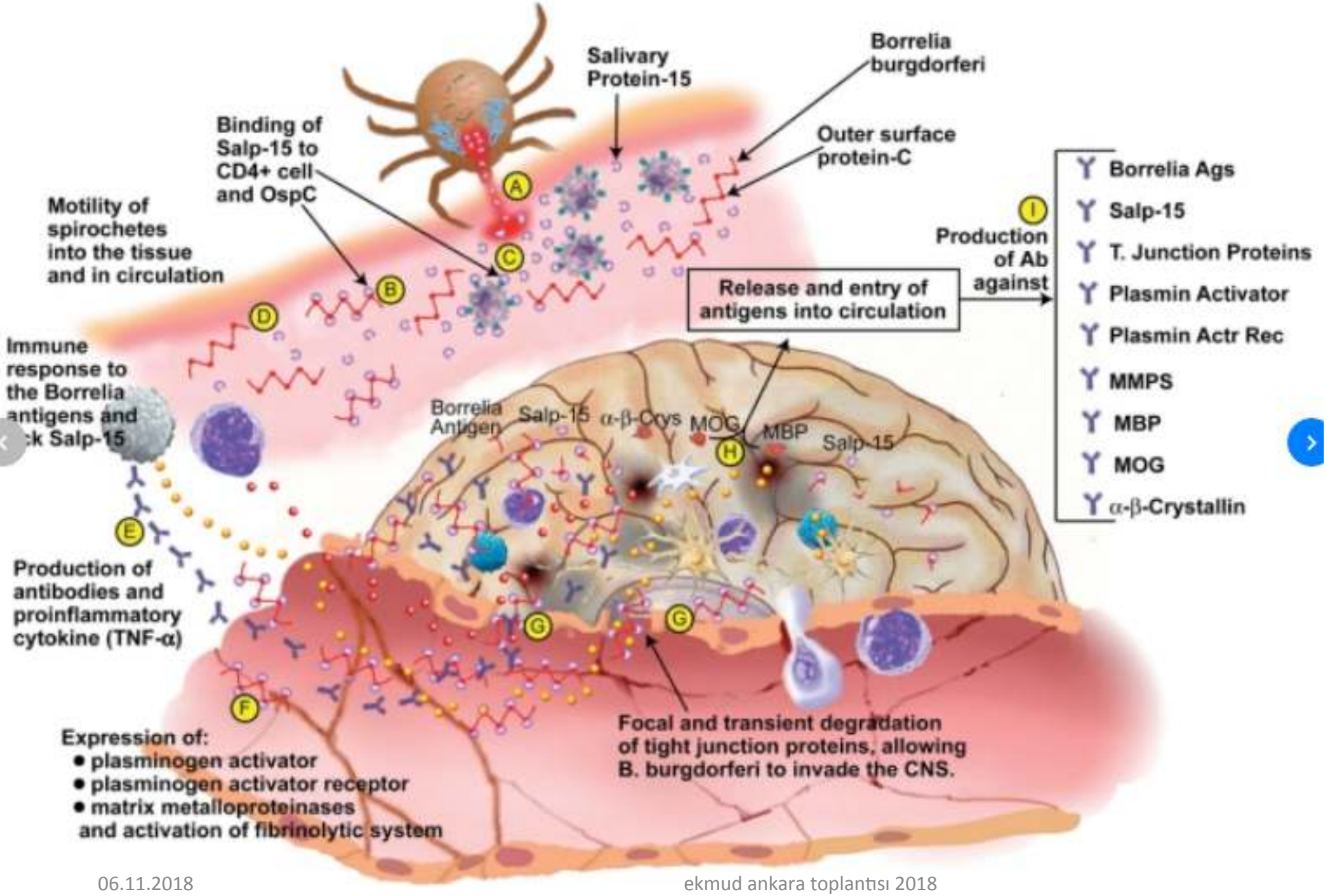
File:Borrelia Interactions.png

File File history File usage Metadata



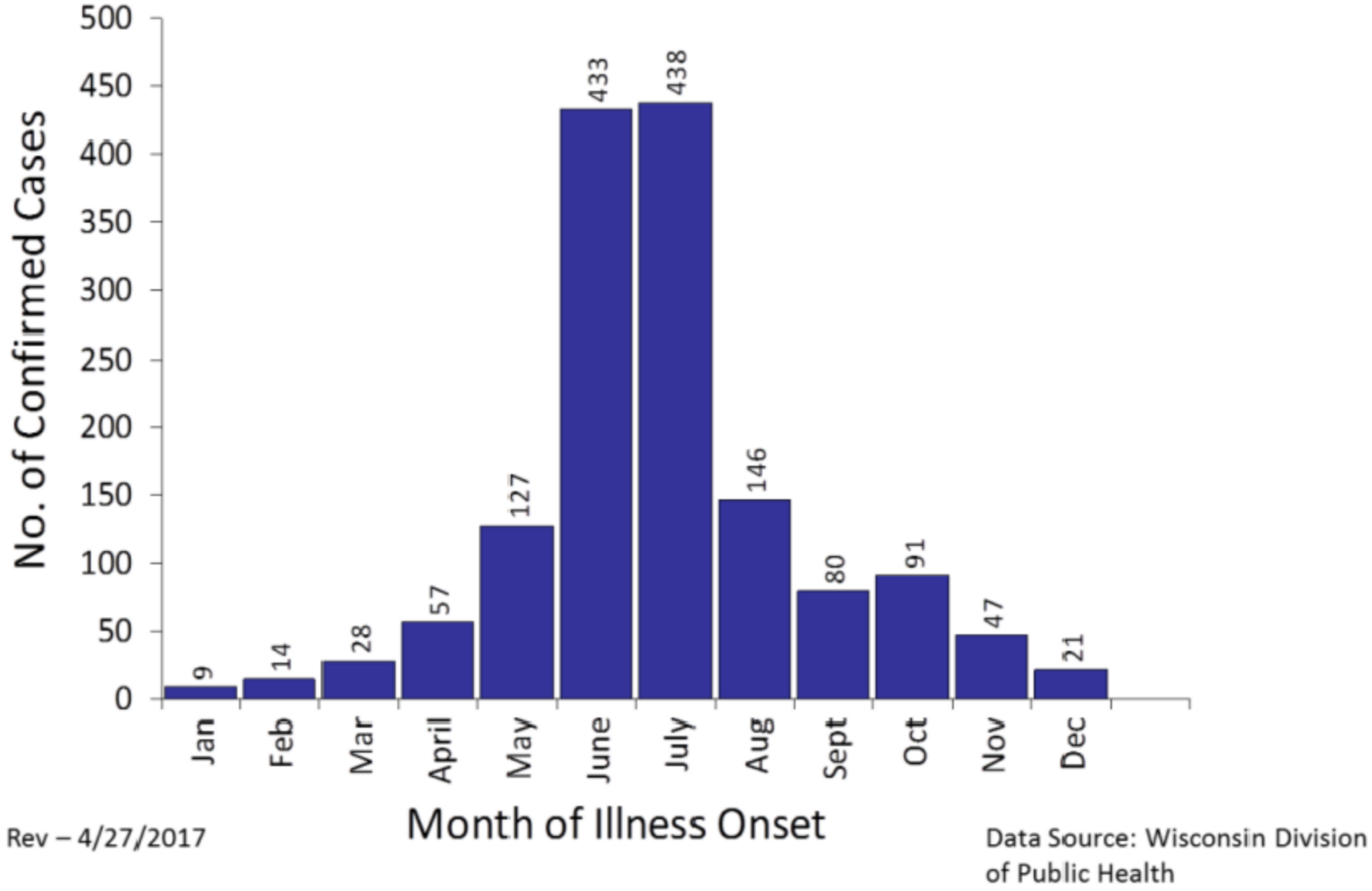
Size of this preview: 798 × 124 pixels. Other resolutions: 320 × 50 pixels | 4,134 × 643 pixels.

Original file (4,134 × 643 pixels, file size: 191 KB, MIME type: image/png)


Salivary Protein-15
Borrelia burgdorferi
Outer surface protein-C
Binding of Salp-15 to CD4+ cell and OspC
Motility of spirochetes into the tissue and in circulation
A
B
C
D
E
F
G
G
H
I
Release and entry of antigens into circulation
Production of Ab against
Borrelia Ags
Salp-15
T. Junction Proteins
Plasmin Activator
Plasmin Actr Rec
MMPS
MBP
MOG
α-β-Crystallin
Borrelia Antigen
Salp-15
α-β-Crys
MOG
MBP
Salp-15
Immune response to the Borrelia antigens and ck Salp-15
Production of antibodies and proinflammatory cytokine (TNF-α)
Expression of:
• plasminogen activator
• plasminogen activator receptor
• matrix metalloproteinases and activation of fibrinolytic system
Focal and transient degradation of tight junction proteins, allowing B. burgdorferi to invade the CNS.

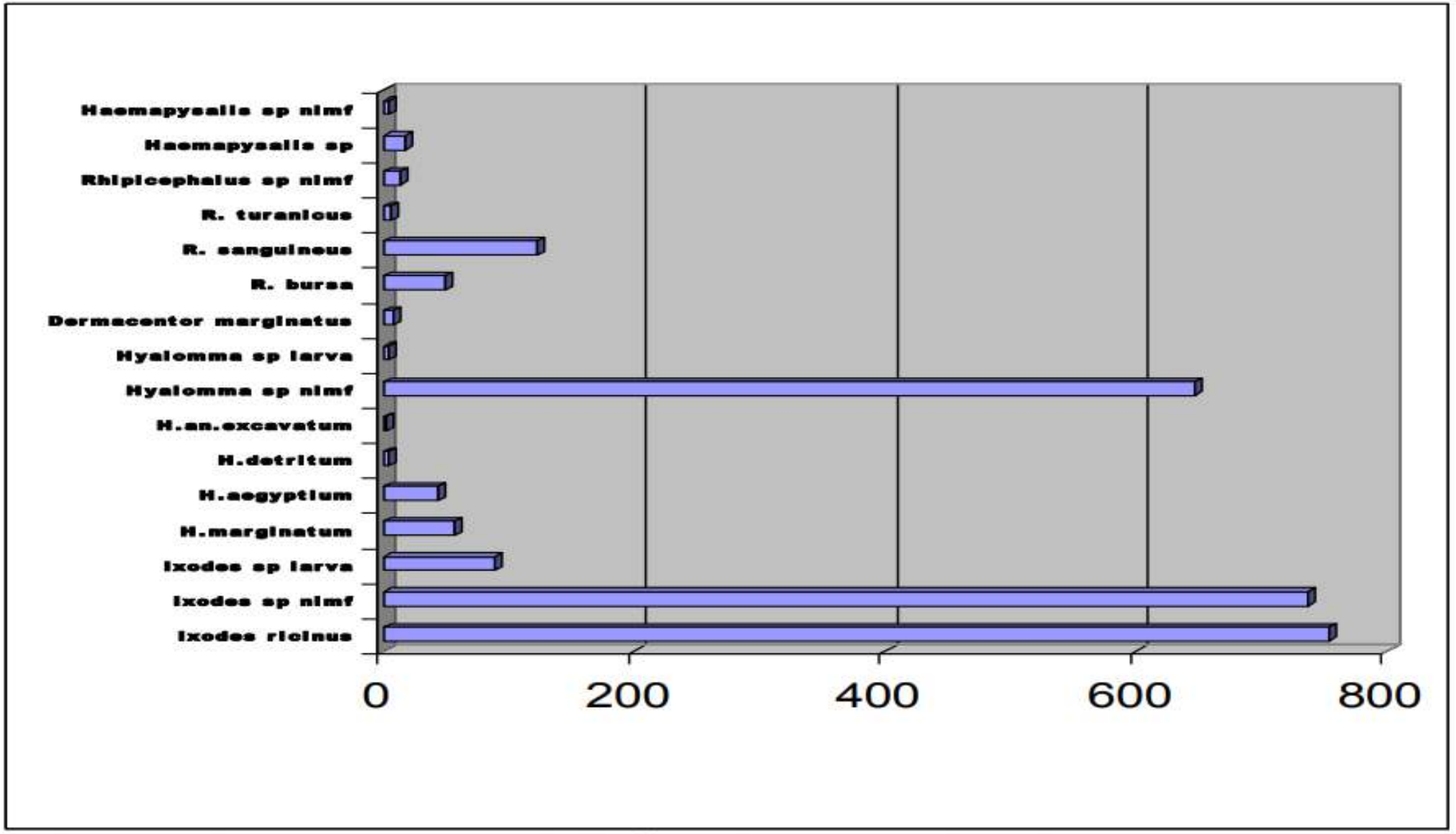
Confirmed Lyme Disease Cases

Reported by Month – Wisconsin 2016 *(n=1,491)*

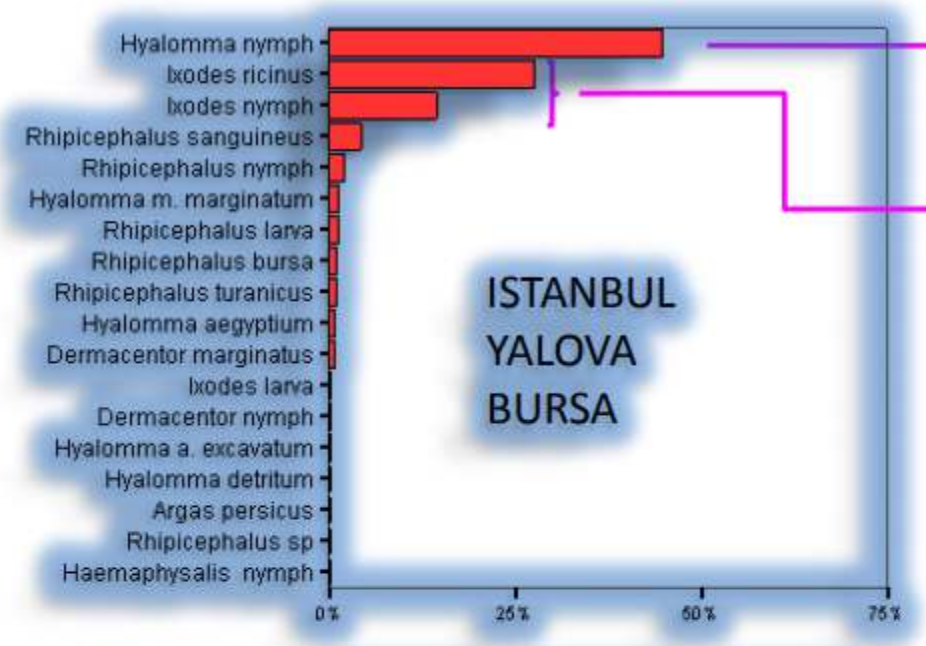


Rev – 4/27/2017

Data Source: Wisconsin Division of Public Health

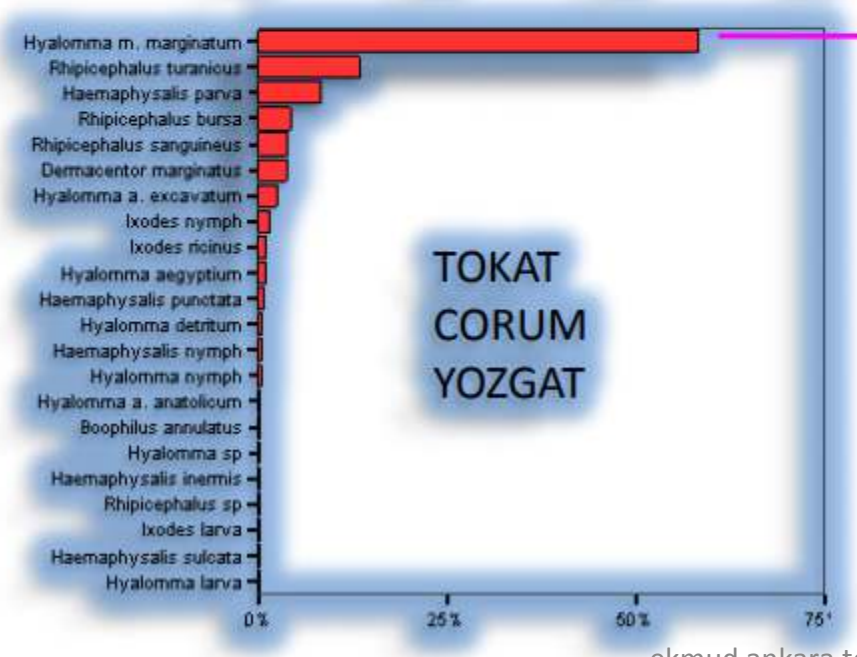


İSTANBUL'DA İNSANLARI TUTAN KENELERLE İLGİLİ DEĞERLENDİRME SONUÇLARI, İstanbul İl Sağlık Müdürlüğü 2007 YILI RAPORU, Prof.Dr. Ayşen Gargılı, Uzm.Dr. Kenan Midilli, Prof.Dr. Recep Öztürk



H. aegyptium (nimf) : KKKA riski yok???, Rickettsia ?

Lyme, TBE
- erişkin kenelerde risk düşük
- nimflerde risk yüksek



KKKA, Rickettsia

ÜLKEMİZDE YAPILAN ÇALIŞMALAR

Gun H, Tanyuksel M, Yukari BA, Cakmak A, Karaer Z (1996) First serodiagnosis of human babesiosis in Turkey. Acta Parasitologica Turcica 20: 1–7.

Polat E, Calisir B, Yucel A, Tuzer E. Turkiye'de *Ixodes ricinus*'lardan ilk defa ayrilan ve uretilen iki *Borrelia* kokeni. Turkiye Parazitol Derg. 1998; 22: 167–73 (In Turkish). (Sığırlardan toplanan kenelerde)

Calisir B, Polat E, Guney G, Gonec L. Investigation on the species composition of the Ixodid ticks from Belgrade forest in Istanbul and their role as vectors of *Borrelia burgdorferi*. Acta Zool Bulg. 2000; 52: 23–8. (Konak arayan –aç- nimfte)

Guner ES, Hashimoto N, Takada N, Kaneda K, Imai Y, Masuzawa T. First isolation and characterization of *Borrelia burgdorferi* sensu lato strains from *Ixodes ricinus* ticks in Turkey. J Med Microbiol. 2003; 52: 807–13.

Gulanber EG, Gulanber A, Albayrak R. 2007. Lyme disease (borreliosis) in a Saint Bernard dog: First clinical case in Turkey. Turk J Vet Anim Sci. 31(5): 367–9.

Bhie M, Yilmaz Z, Golcu Z, Torun S, Mikula I. Seroprevalence of anti-Borrelia *burgdorferi antibodies* in dogs and horses in Turkey. Ann Agric Environ Med. 2008; 15: 85–90.

A.kargılı-Marmara Üniversitesi SBF-sunumu

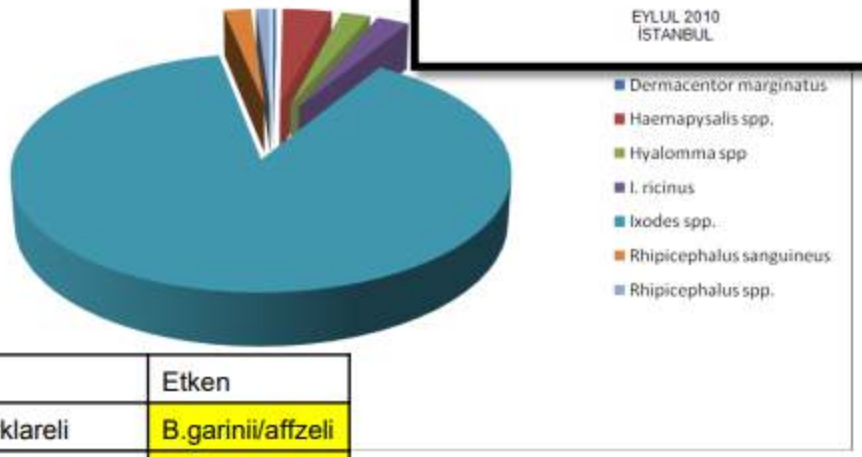
	Erişkin Ixodes spp.		Enfeksiyon oranı (%)	Ixodes spp. nimf		Enfeksiyon oranı (%)	Toplam	Enfeksiyon oranı (%)
	incelenen	pozitif		incelenen	pozitif			
2006	237	35	14.76	110	9	8.18	347	12.68
2007	183	16	8.74	13	2	15.38	196	9.18
Toplam	339	44	12.97	123	11	8.94	462	11.90

Zoonotik Etkenlerin Vektör Kenelerde Saptanması, Risk Haritalarının Oluşturulması ve Lyme Hastalığı Takibi

Proje No: 108S171

Prof.Dr. Ayşen Gargılı
Prof.Dr. Recep Öztürk
Prof.Dr.Zati Vatansever
Doç.Dr.Kenan Midilli
Dr.Sevgi Ergin
Dr.Gönül Şengöz
Dr.Hatice Alp

EYLUL 2010
İSTANBUL



Tür adı	Havuz	Merkez	Etken
I.ricinus	25 erkek	Demirköy yolu, manyetik alan mevkii, Kırklareli	B.garinii/affzeli
I.ricinus	25 dişi	Demirköy yolu, manyetik alan mevkii, Kırklareli	B.valaisiana
I.ricinus	1 erkek 2 dişi	Demirköy, Yeni mahalle, tepebaşı mevkii, Kırklareli	B.valaisiana
I.ricinus	11 dişi	Çatalca piknik alanları, İstanbul	B.garinii/affzeli
I.ricinus	11 erkek 3 dişi	Görele köyü, Beykoz, İstanbul	B.garinii/affzeli
Ixodes spp.	3 nimf	Öğümce köyü, Beykoz, İstanbul	B.garinii/affzeli
Ixodes spp.	3 nimf	Belgrad ormanı, Neşet suyu mevkii, Bahçeköy, İstanbul	B.garinii/affzeli
Hyalomma spp.	2 nimf	Görele köyü, Beykoz, İstanbul	B.valaisiana

Saha kenelerinde 1225 örnek/44 havuz/%18 pozitiflik

KOU Sag Bil Derg 2018, C.4, S.3, s.103-106
doi:10.30934/kusbed.423490

DERLEME

TÜRKİYE'DE LYME HASTALIĞI

LYME DISEASE IN TURKEY

Selim Öncel

ÖZ

Lyme hastalığı, Batı Avrupa'da ve Amerika Birleşik Devletleri'nin kuzeydoğusunda en sık görülen vektör kaynaklı hastalıktır. Lyme hastalığı, bildirimi zorunlu bir hastalıktır. Türkiye'de çeşitli bölgelerden Lyme hastalığına yönelik seroprevalans çalışmaları ve vaka bildirimleri olmasına karşın, geniş epidemiyolojik araştırma bulunmamaktadır.

Hastalık, adını Amerika Birleşik Devletleri'nin Connecticut eyaletindeki Old Lyme köyünden almaktadır ve ilk kez 1980'lerin başında Willy Burgdorfer tarafından yalıtılan etkenleri arasında *Borrelia burgdorferi* sensu stricto, *B. garinii, B. afzelii* ve *B. mayonii* bulunmaktadır.

Lyme hastalığı etkenleri, Ixodes cinsi kenelerle bulaşır. Bu keneler larva, nimfa ve erişkinlik evrelerinde kemirgenlerin, kuşların, geyiklerin veya insanların ektoparaziti olarak barınabilir. İnsanlar, borrelya spiroketlerinin doğal yaşam siklusunun bir parçası değildirler.

Türkiye'de Lyme hastalığının yayılması için gerekli ekosistemin mevcut olduğu iklim özellikleri; sığır, koyun, keçi, tilki ve kaplumbağalarda saptanan vektör keneler ve en önemlisi, Borrelya ile enfekte *Ixodes* ricinus türü keneler bakımından kesinleşmiştir. Türkiye'de insanlarda Lyme seropozitifliği %2-44 arasında değişmektedir.

Türkiye'den sunulan Lyme vakalarının uluslararası tıp literatürüne katkısı, daha çok pediyatrik nöroborelyoz vakalarında öne çıkmaktadır. Literatürdeki altıncı borrelyozla ilişkili pediyatrik transvers miyelitin ve intravenöz immünoglobüline yanıt vermeyen, *B. burgdorferi*'ye bağlı Guillain-Barré sendromlu bir çocukta plazmaferezin yararının bildirildiği vaka sunumları buna güzel örneklerdir.

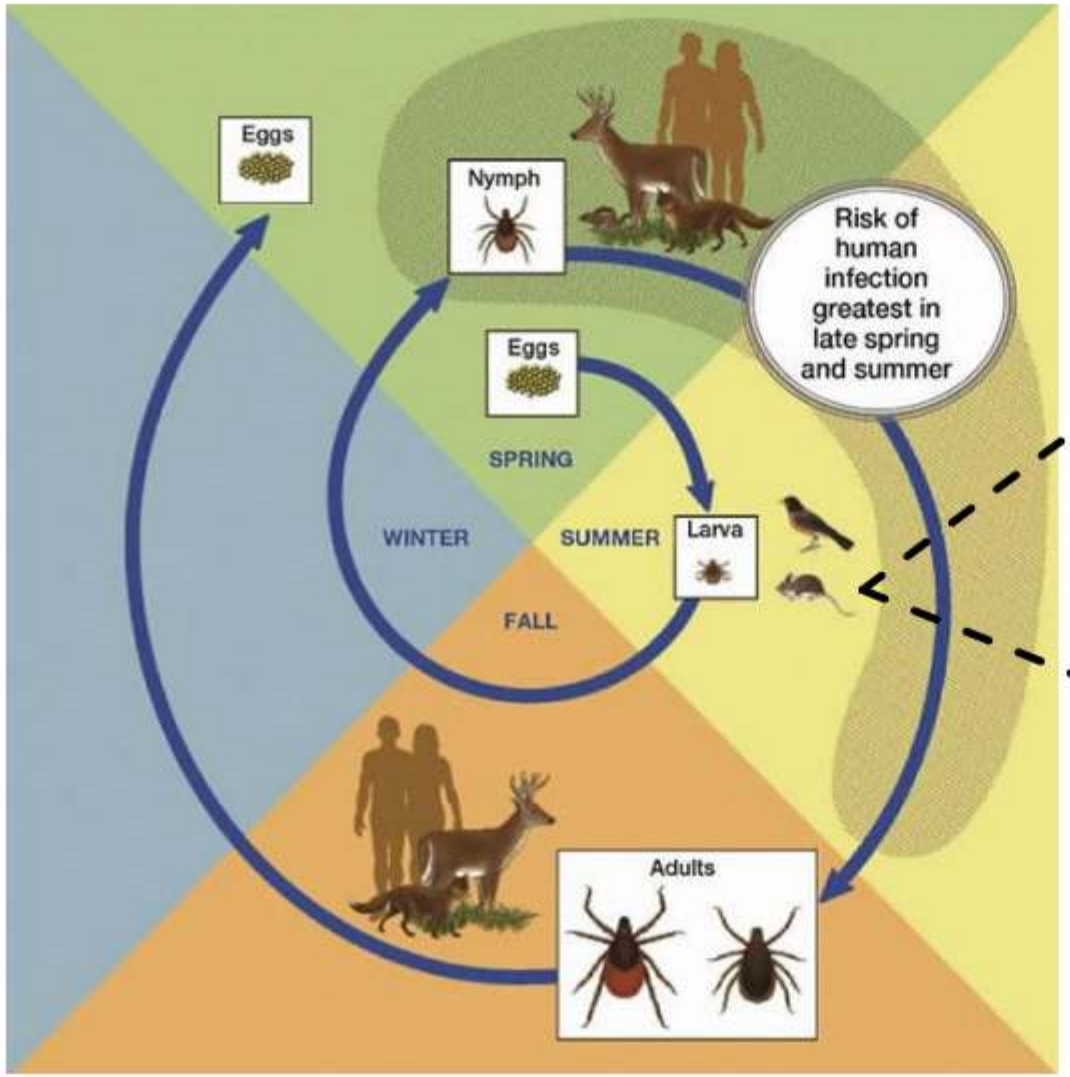
2010 yılına kadar yaklaşık 60 olgunun bildirildiği ve günümüze değin bildirilmiş vaka sayısının 80'i geçmediği Türkiye'de Lyme hastalığı, medyadaki bazı desteksiz iddialara karşın, şimdilik büyük bir sağlık sorunu olarak görünmemektedir.

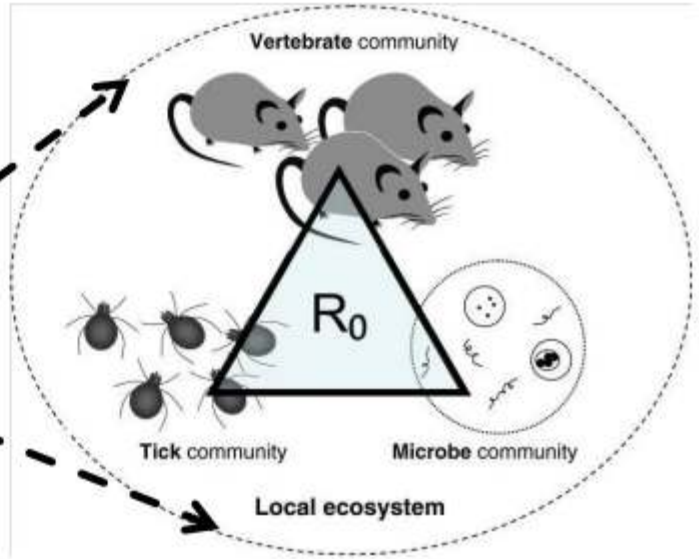
Anahtar sözcükler: *Lyme hastalığı, Borrelia burgdorferi, İksodes risinus, Türkiye*

SEROPOZİTİFLİK: %3.8-33.6

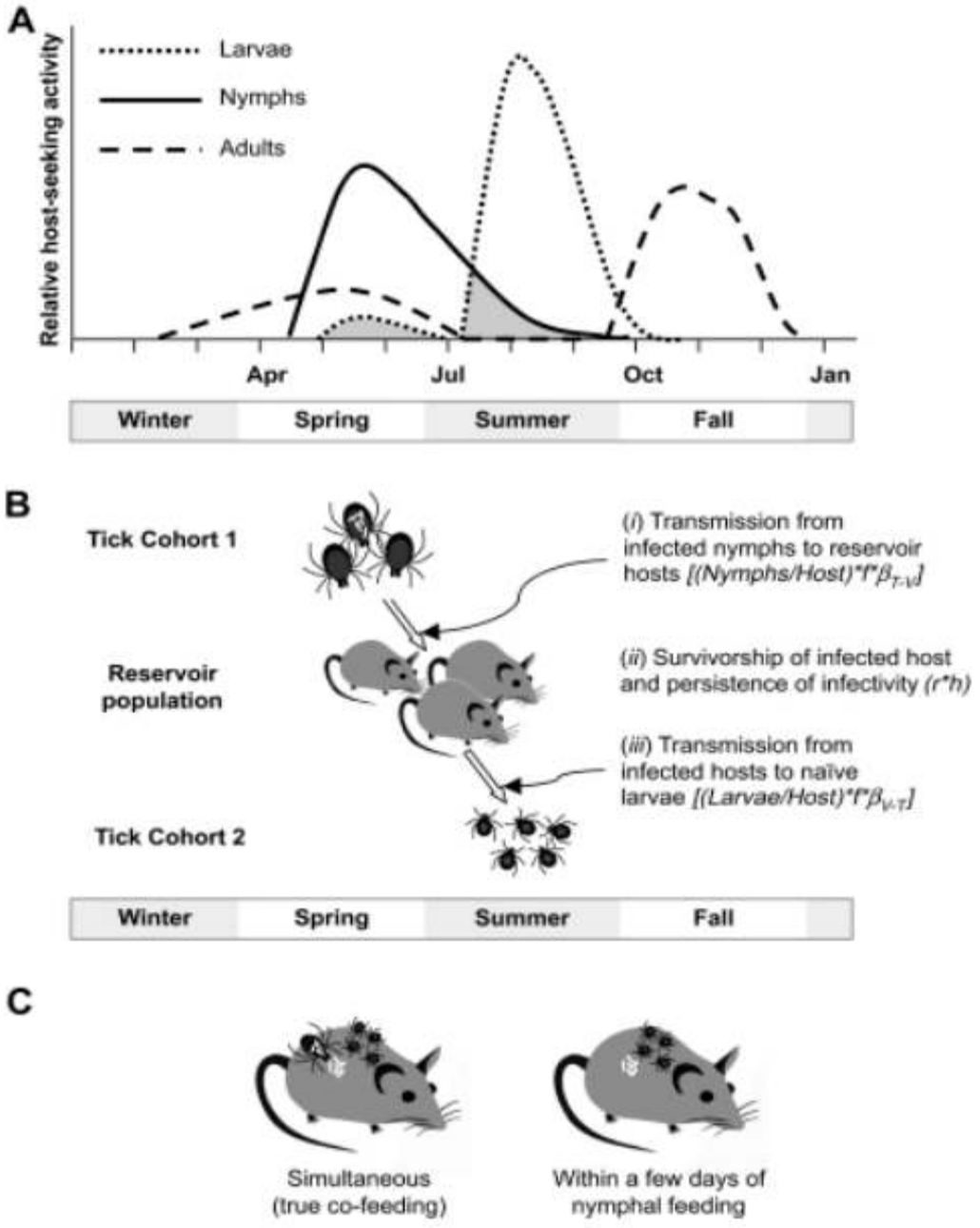
Çizelge 1. Türkiye'deki Lyme seropozitifliğinin araştırıldığı başlıca çalışmalar

Yazar	Bölge	Örneklem büyüklüğü (kişi)	ELISA pozitifliği (%)	Western blot ile doğrulama (%)
Cora ve diğ.[46]	Trabzon	884	26,7	14,4
Utaş ve diğ.[47]	Kayseri	50	10	Çalışılmamış
Mutlu ve diğ.[48]	Antalya	89	33,6	Çalışılmamış
Göral ve diğ.[49]	Bursa	322	Köyde 35,8, kasabada 1,4	Çalışılmamış
Hızel ve diğ.[50]	Ankara	115	10,4	Çalışılmamış
Birengel ve diğ.[51]	Ankara	54 hasta, 50 riskli grup, 50 kontrol	Hasta 13, riskli grup 6, kontrol 4	Çalışılmamış
Çelik ve diğ.[52]	Denizli	95	18,9	Çalışılmamış
Demirci ve diğ.[53]	Isparta	122	Kene ısırığı öykülü hastalarda 17, kontrol	Çalışılmamış
Aydın ve diğ.[54]	Trabzon	90	6,6	Çalışılmamış
Kaygusuz ve diğ.[55]	Elazığ	19	0	Çalışılmamış
Güneş ve diğ.[56]	Sivas	405	Risk grubu 0,4, kontrol grubu 0,7	Çalışılmamış
Kaya ve diğ.[57]	Düzce	349 ormancı ve çiftçi, 193 kan donörü	Risk grubu 10,9, kan donörü 2,6	1,1
Aslan Basbulut ve diğ.[58]	Samsun	419	4	3,3
Bucak ve diğ.[59]	Bolu	196	13,7	4,6
Parlak ve diğ.[60]	Van	446	3,8	0,9
Cevizci ve diğ.[61]	Çanakkale	30 şizofren, 60 sağlıklı	Şizofrenlerde 13,3, sağlıklılarda 15,0	Çalışılmamış
Gazi ve diğ.[62]	Manisa	324	Bildirilmemiş	0,9





Larval Survival rate: %10
Moulting rate to nymphal stage: %10
Moulting rate to adult stage: %10
Transstadial transmission √
Transovarial????


A
Relative host-seeking activity
Larvae
Nymphs
Adults
Apr
Jul
Oct
Jan
Winter
Spring
Summer
Fall
B
Tick Cohort 1
(i) Transmission from infected nymphs to reservoir hosts [(Nymphs/Host)*f*β T-v]
Reservoir population
(ii) Survivorship of infected host and persistence of infectivity (r*h)
(iii) Transmission from infected hosts to naïve larvae [(Larvae/Host)*f*β v-T]
Tick Cohort 2
Winter
Spring
Summer
Fall
C
Simultaneous (true co-feeding)
Within a few days of nymphal feeding

LYME HASTALIĞI ETKENİ ÜLKELERE GÖRE DEĞİŞİR.

- America da 9 tür B. burgdorferi sensu lato:
- B. americana, B. andersonii, B. bissettii, B. burgdorferi sensu stricto (s.s.), B. californiensis, B. carolinensis, B. garinii, B. kurtenbachii, and B. Mayonii.
- Avrupada B. afzelii, B.garinii, B. kurtenbachii,
- Uzakdoğuda :B. Mayonii, B turdi
  - Dünyada 80 ülkede görülür.
- Scott D.Int. J. Med. Sci. 2017, Vol. 14

BULAŞ

- KENE-HAYVAN-İNSAN
- HAYVANDA Bb HASTALIK YAPMAYABİLİYOR
- KUŞLAR ARACILIĞI İLE ÜLKELER ARASI TAŞINIYOR.
- AVRUPADA HER YIL 65000 OLGU, ABD DE 300000 OLGU
- AVRUPADA EN SIK ETKEN: B.AFZELİİ,B.GARİNİİ

Rizzoli a. Euroserveillance 2011

Laryy M.Bush. Disease a month 2018

KLİNİK

- 1. ERKEN LOKALİZE DÖNEM:eritema migrans
- 2. ERKEN YAYGIN DÖNEM
- 3. GEÇ YAYGIN DÖNEM

Tablo 1. Lyme tanısında Hastalık Kontrol ve Önleme Merkezi tarafından kullanılan puanlama sistemi.

Durum	Puan
1. Endemik bölgede kenelerle temas etmek	1
2. Oyküsünde Lyme ile ilgili semptomların değerlendirilmiş olması	2
3. Hastalık ile ilgili sistemik belirti veya semptom olması	1
4. Iki veya daha fazla sistem tutulumu (artrit, fasiyal palsi vs.)	2
5. EM görülmesi ve hekim tarafından doğrulanması	7
6. Biyopsi ile AAK doğrulanması	7
7. Seropozitiflik (Lyme IgG/IgM antikoru)	3
8. Çift serumda seropozitiflik titre artışı	4
9. Gümüşleme ile doku biyopsisinde bakterinin gösterilmesi	3
10. Doku mikroskobisinde monoklonal immünfloresan ile bakterinin (+)	4
11. Kültür pozitifliği	4
12. *B. burgdorferi* antijen pozitifliği	4
13. *B. burgdorferi* DNA/RNA (16sRNA) pozitifliği	4
Tanıda puanları değerlendirme:	
Lyme Borreliosis kuvvetle pozitif	≥7
Lyme Borreliosis mümkündür	≥5-6
Lyme Borreliosis olabilir	≥4

IgG: İmmünglobulin G, IgM: İmmünglobulin M, DNA: Deoksiribonükleik asit, RNA: Ribonükleik asit, EM: Eritema migrans, AAK: Atrofik akrodermatitis kronika *B. Burgdorferi: Borrelia burgdorferi*

Tablo 2. Lyme nöroborreliozisin devreleri[5]

Hastalığın devresi	Klinik bulgu	Patolojik bulgu
1. Devre	EM ve diğer genel semptomlar	Lokal inflamasyon
2. Devre (erken LNB)	Kraniyal ve periferik sinir tutulum bulguları	Menenjit, vaskülit, nörit
3. Devre (geç/kronik LNB)	Meningovasküler tutulum, meningoensefalomiyelit bulguları	Menenjit, okluziv vaskülit, serebral infarkt, infiltratif ve/veya atrofik menengoensefalomiyelit

LNB: Lyme nöroborreliyoz. EM: Eritema migrans.

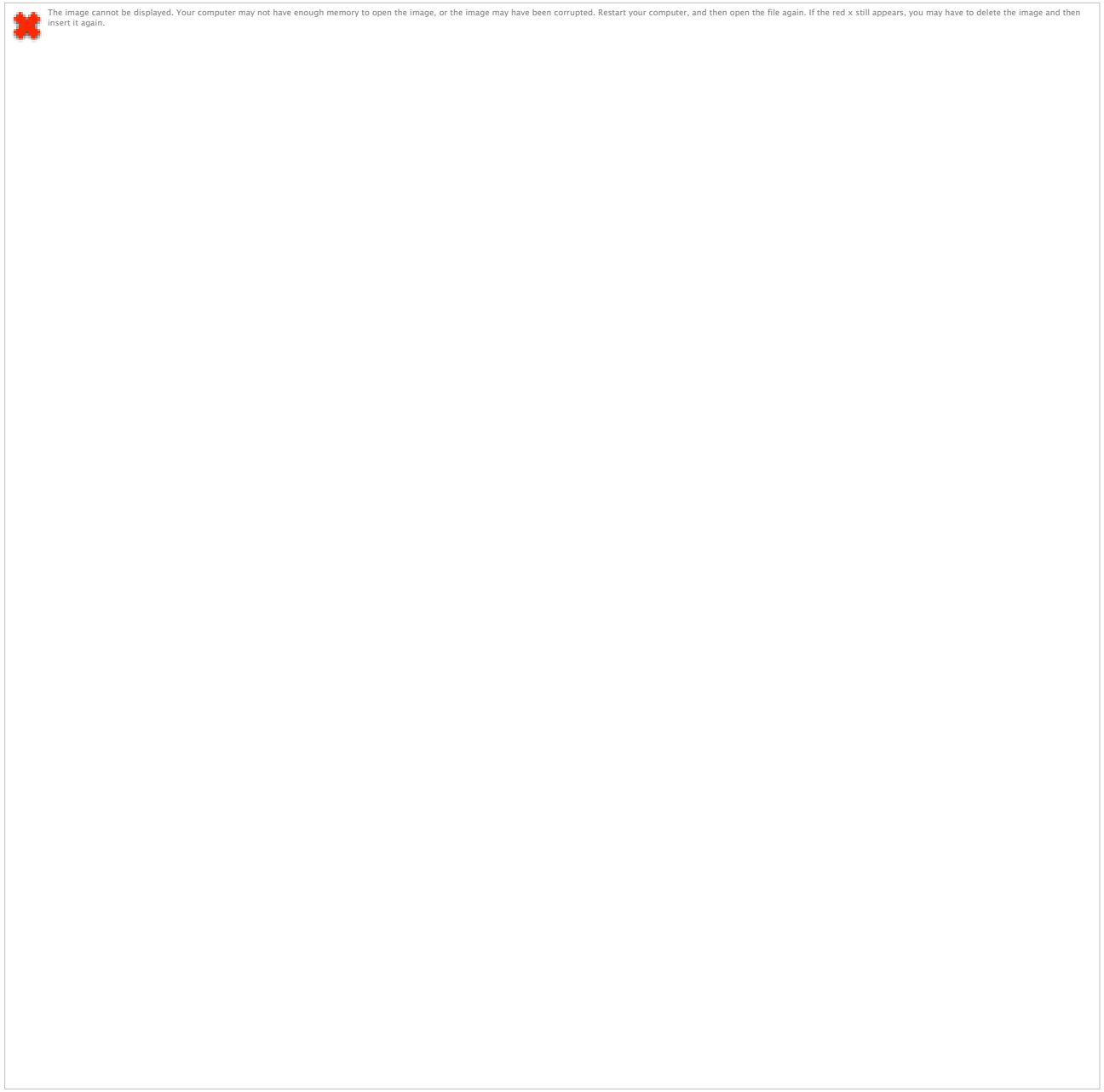

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Table 1
Clinical manifestations of Lyme disease.

Organ system involved	Early stage of infection		Late stage of infection
	Localized infection (Stage I)	Disseminated infection (Stage II)	Persistent infection (Stage III)
Skin	Erythema migrans	Secondary annular lesions, malar rash, diffuse erythema or urticaria, lymphocytoma	Acrodermatitis chronica atrophicans, localized scleroderma-like lesions
Musculoskeletal		Migratory pain in joints, muscles, tendons, bursae, bones Brief arthritis episodes, myositis, osteomyelitis, panniculitis	Prolonged arthritis episodes, chronicarthritis, periostitis, joint subluxations, enthesopathy
Neurologic		Meningitis, facial palsy, radiculoneuritis, mononeuritis multiplex, myelitis, mild encephalitis, cerebellar ataxia	Chronicencephalomyelitis, spastic paraparesis, ataxis gait, chronic axonic polyradiculopathy
Cardiovascular		Atrioventricular nodal block, myopericarditis, pancarditis	
Ocular		Conjunctivitis, iritis, choroiditis, panophthalmitis, retinal hemorrhage or detachment	Keratitis
Hepatobiliary		Mild or recurrent hepatitis	
Respiratory		Dry cough, sore throat	
Renal		Microscopic proteinuria and/or hematuria	
Genito-urinary		Orchitis	
Hematolymphoid	Regional	lymphadenopathy	Generalized/regional lymphadenopathy
General constitutional	Minor	Severe malaise and fatigue	Fatigue

CİLT
KAS-EKLEM-İSKELET
NÖROLOJİK

KARDİYOVASKÜLER
OKULER
HEPATİK
SOLUNUM SİSTEMİ
REANAL
GENİTOÜRİNER
HEMATOLOJİK
GENEL BELİRTİLER

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AKRODERMATİTİS KRONİKA ATROFİKANS

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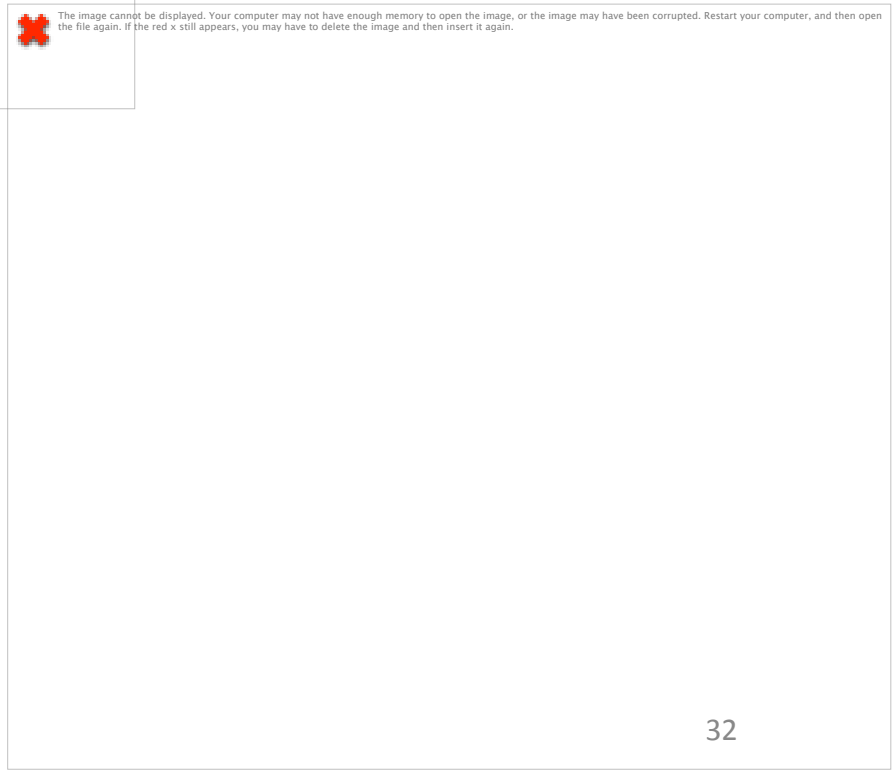
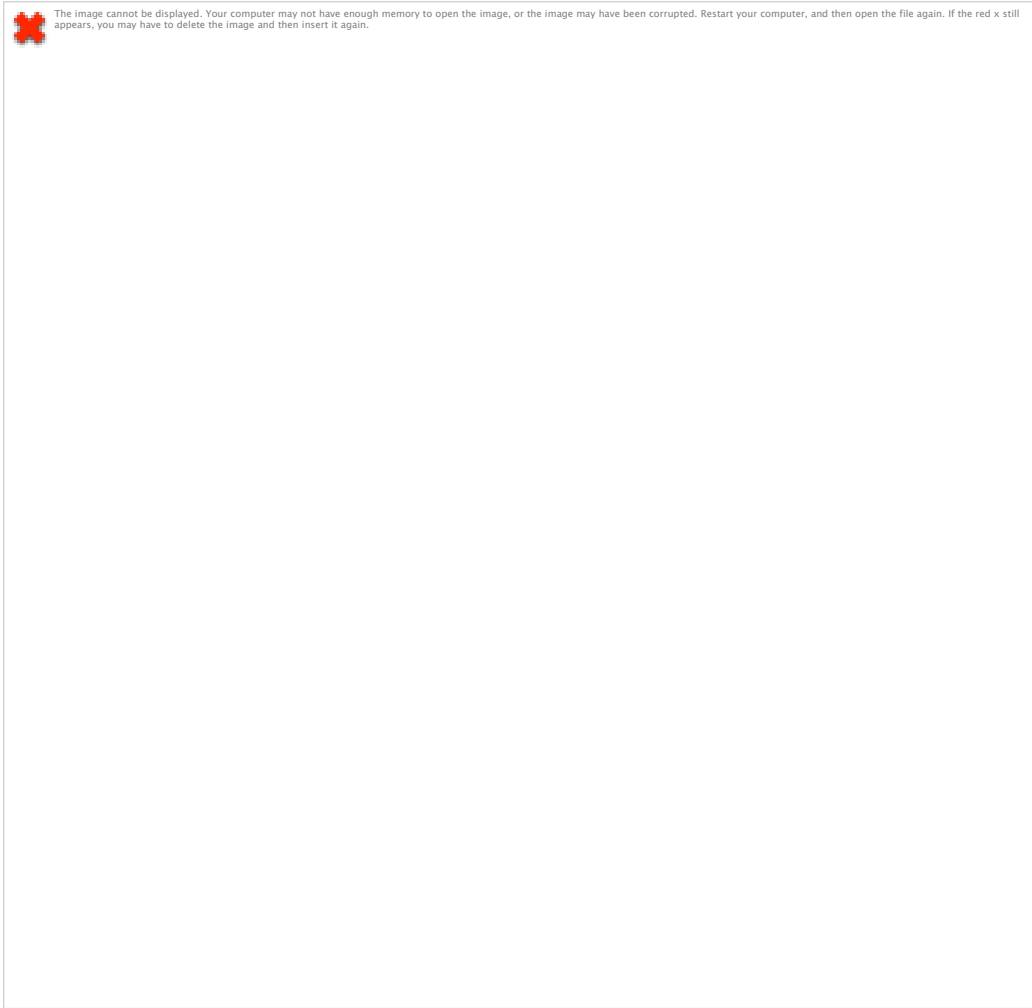


NÖROBORRELİYOZ

TEKRARLAYAN ARTRİT

LYME CARDİTİS



HASTALIĞIN DEVRELERE GÖRE KLİNİK TUTULUMU DEĞİŞEBİLİR.

- %60-80 ERİTEMA MİGRANS
- %10-20 NÖROBORRELİYOZ
- %1-5 KARDİYAK VE EKLEM TUTULUMU
- OTİSM-NÖROPSİŞİK BOZUKLUKLAR

Cameron D. Expert Rev Anti Infect Ther 2014

Neuropsychiatric Lyme Borreliosis: Robert C. Bransfield. 2018

- Hastalığın patogenezinde proinflamatuvar sitokin salınımı(Interleukin-6, Interleukin-8, Interleukin-12, Interleukin-18 ve interferon-gamma)
- Kemokinlerin proinflamatuvar lipoproteinleri aktive etmesi (chemokines CXCL12, CXCL13 ve CCL19).
- NÖROPSİKİYATRİK TABLODA 3 TEMEL OLAY VARDIR

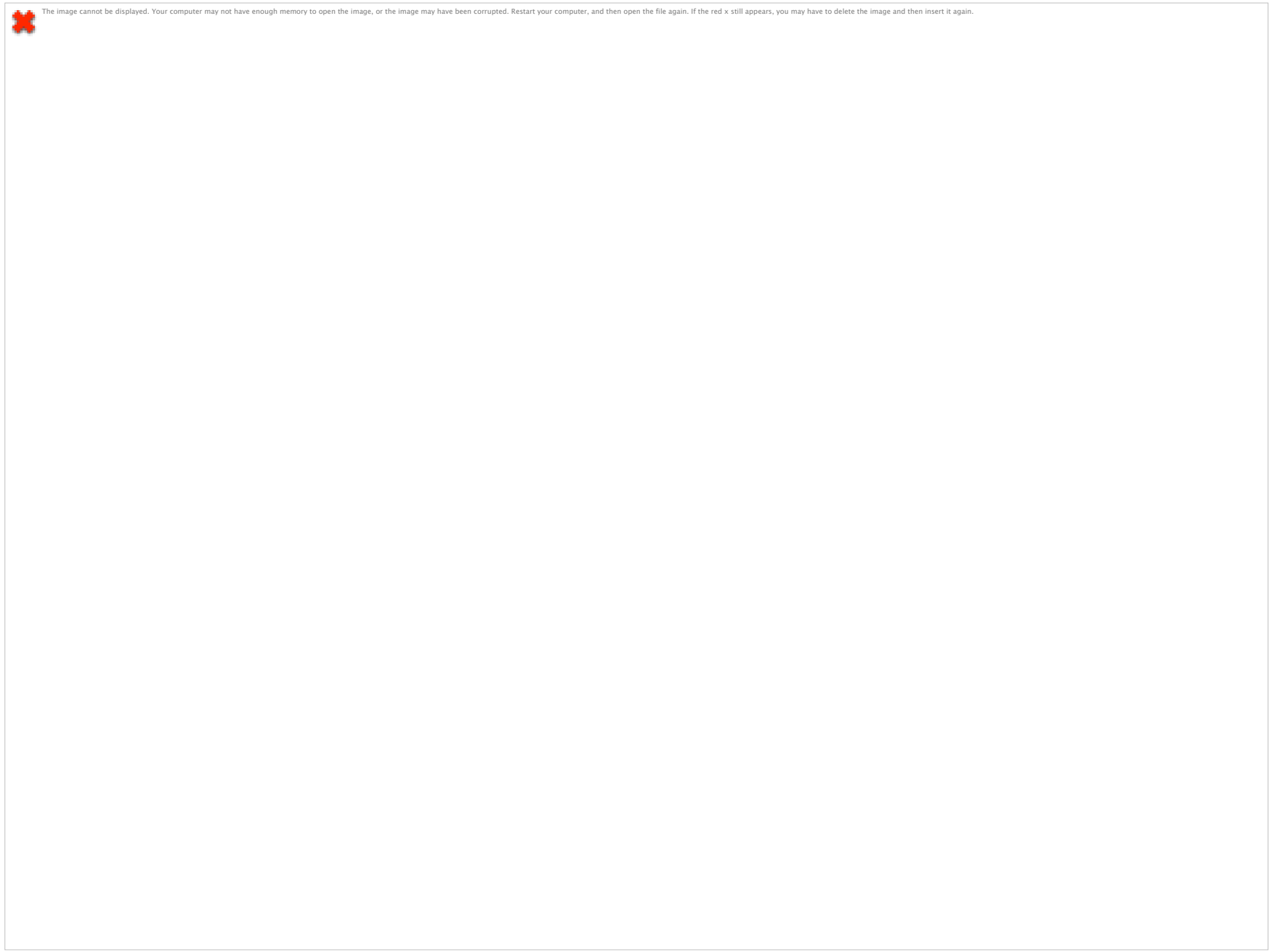
Serebrovaskuler infarkt ile karekterize menengovaskuler form

SSS tutan atrofik form: Lyme menegoensefaliti, kortikal atrofi, gliosis, hafiza kaybı

Nöropsikiyatrik semptomlara yol açan SSS dışı infeksiyon tablosu ve sinir dokusunun tutulumu(radikülit, nörit, uyuşma, karıncalanma, fasikülasyonlar vs)

KO-İNFEKSİYONLAR

- Anaplasma phagocytophilium:
- Babesiosis microti:
- Ehrlichosis spp.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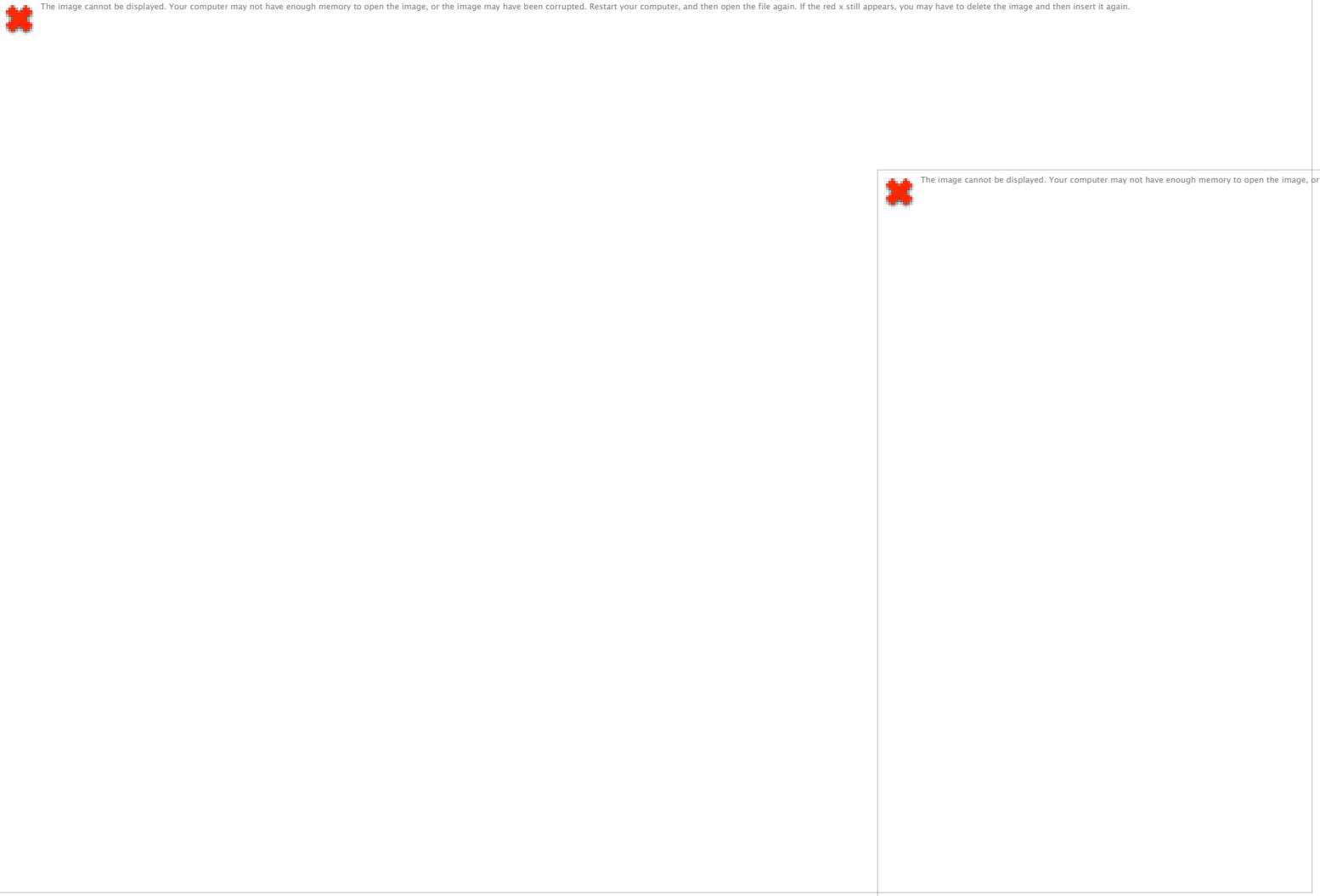
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erchliosis


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KENE İNCELEMESİNDE: BİRDEN FAZLA M.O KENELERDE BULUNDUĞU SAPTANDI

TANI:
seroloji, kültür, KLİNİK VE BULGU, xsenodiagnosis

Kene ısırmasından sonra %60-80 eritema migrans

Kene ısırmasından sonra 7 gün içinde dokuda kültürde Bb gösterilmesi

Hastanın kanında 4-6 haftada artan ANTİKOR DÜZEYİ

PCR-özellikle eklem sıvısında

WB-BOS VE KANDA IgM ve IgG


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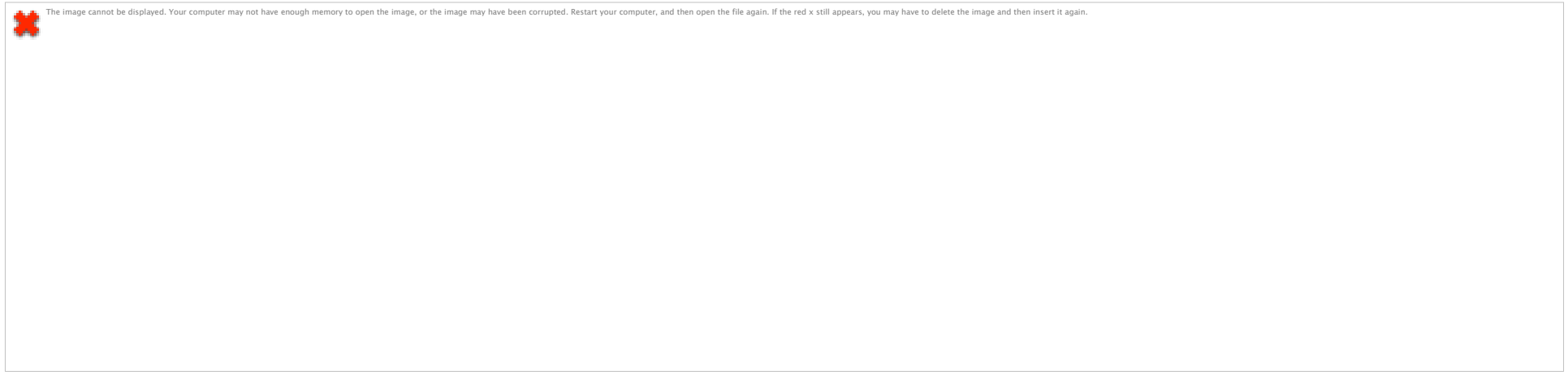

- SEROLOJİK TESTLERİN DUYARLILIĞI HETEROJENDİR:

erythema migrans 50 % (95 % CI 40 % to 61 %); neuroborreliosis 77 % (95 % CI 67 % to 85 %);

acrodermatitis chronica atrophicans 97 % (95 % CI 94 % to 99 %);

Spesifik Olmayan Lyme borreliosis 73 % (95 % CI 53 % to 87 %).

SAĞLIKLI KİŞİLERDEDE SEROLOJİ POZİTİF OLABİLİR.

TETSLERİN İKİ BASAMAKLI YAPILMASI UYGUNDUR.

Elitza S.Theel. Jclin Microbiol 2016


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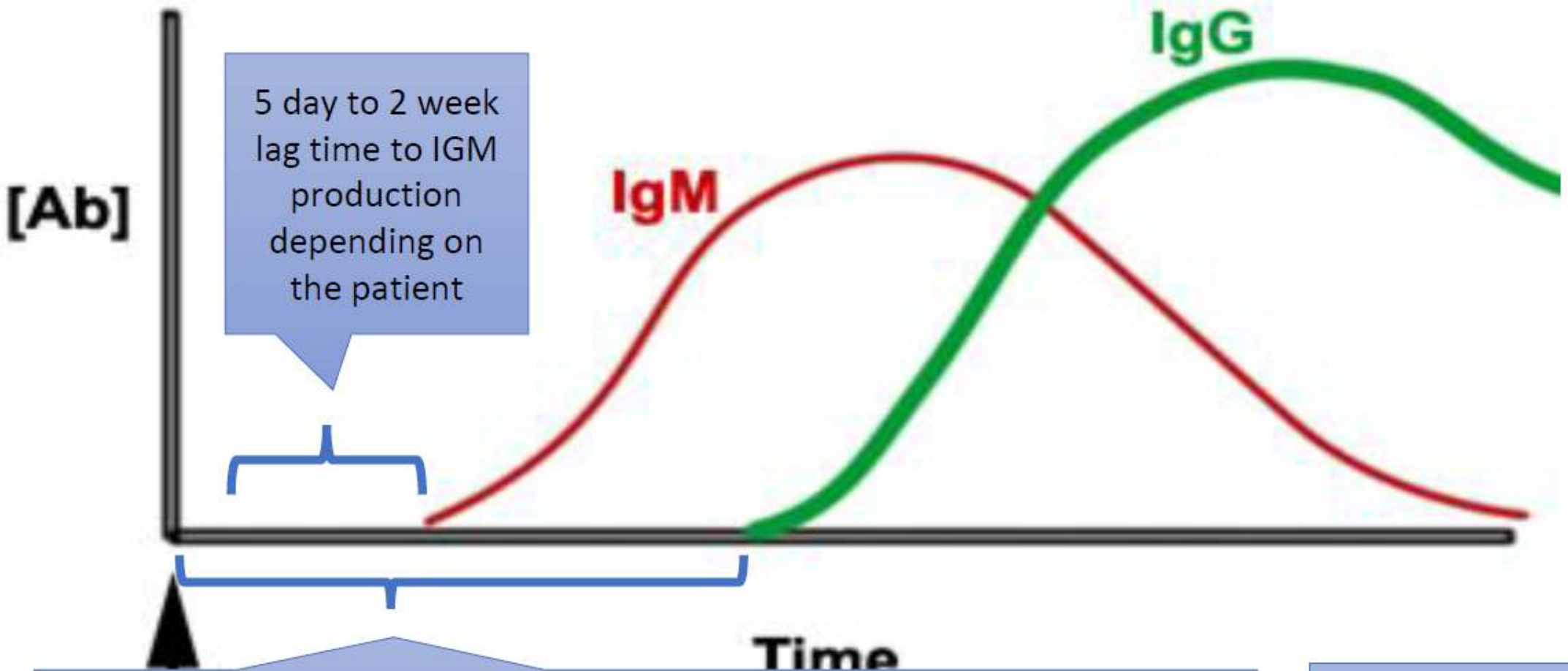
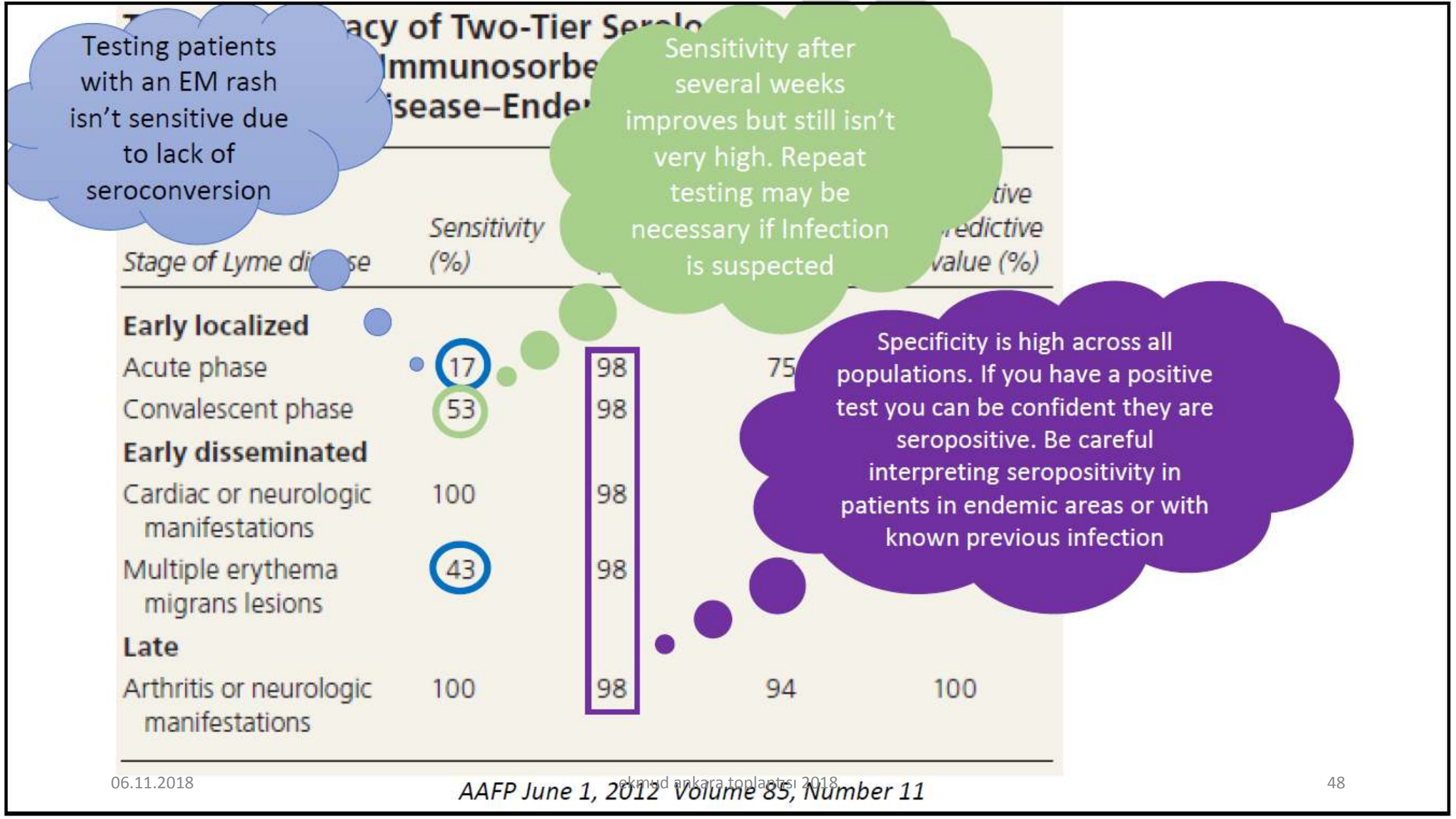
Antibody response following infection



In patients with previous infection knowing if and when they were treated is important. If treated early they may not have made antibodies. If treated late they should have IgG but likely stopped making IgM so a new IgM signal may be diagnostic of a

http://www.medicine.mcgill.ca/physio/vlab/immun/images/mgbiphasic.gif

IgG Titers may be elevated for years, persistence of antibodies doesn't indicate chronic or repeat infection



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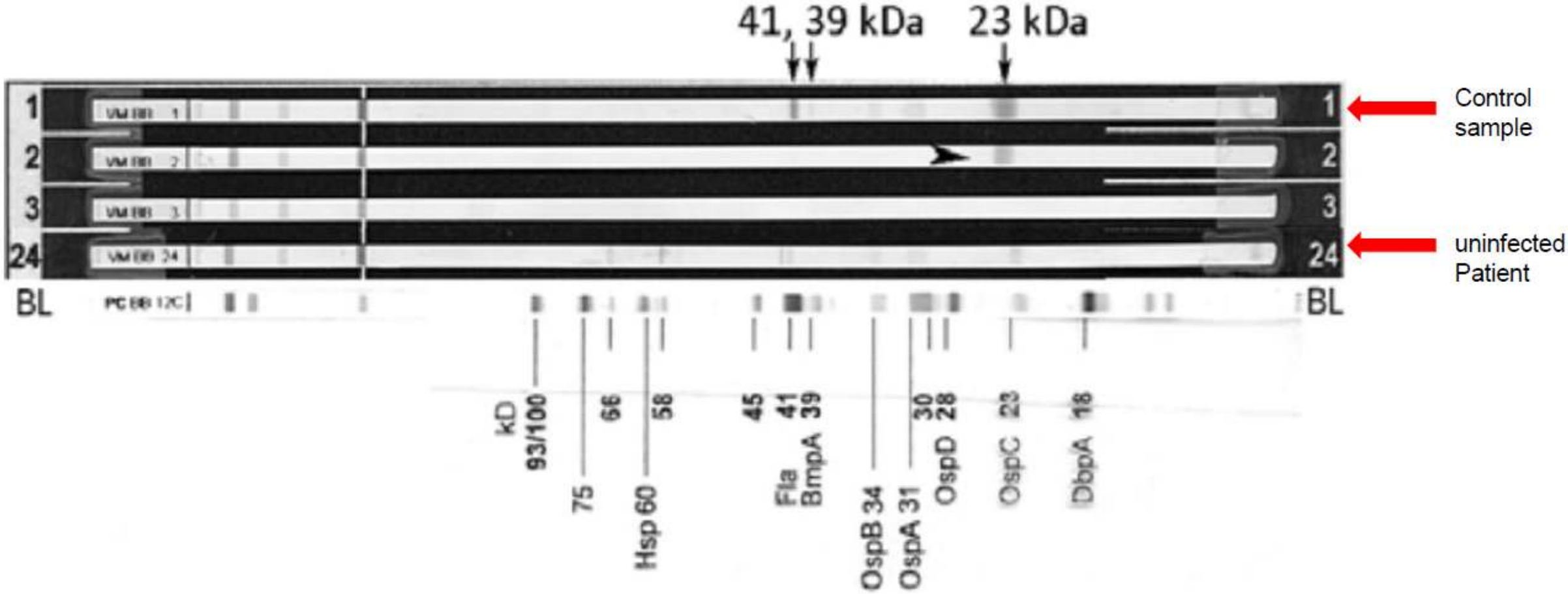
Immunosorbe
isease–Ende

Stage of Lyme disease	Sensitivity (%)		tive predictive value (%)	
Early localized				
Acute phase	17	98	75	
Convalescent phase	53	98		
Early disseminated				
Cardiac or neurologic manifestations	100	98		
Multiple erythema migrans lesions	43	98		
Late				
Arthritis or neurologic manifestations	100	98	94	100

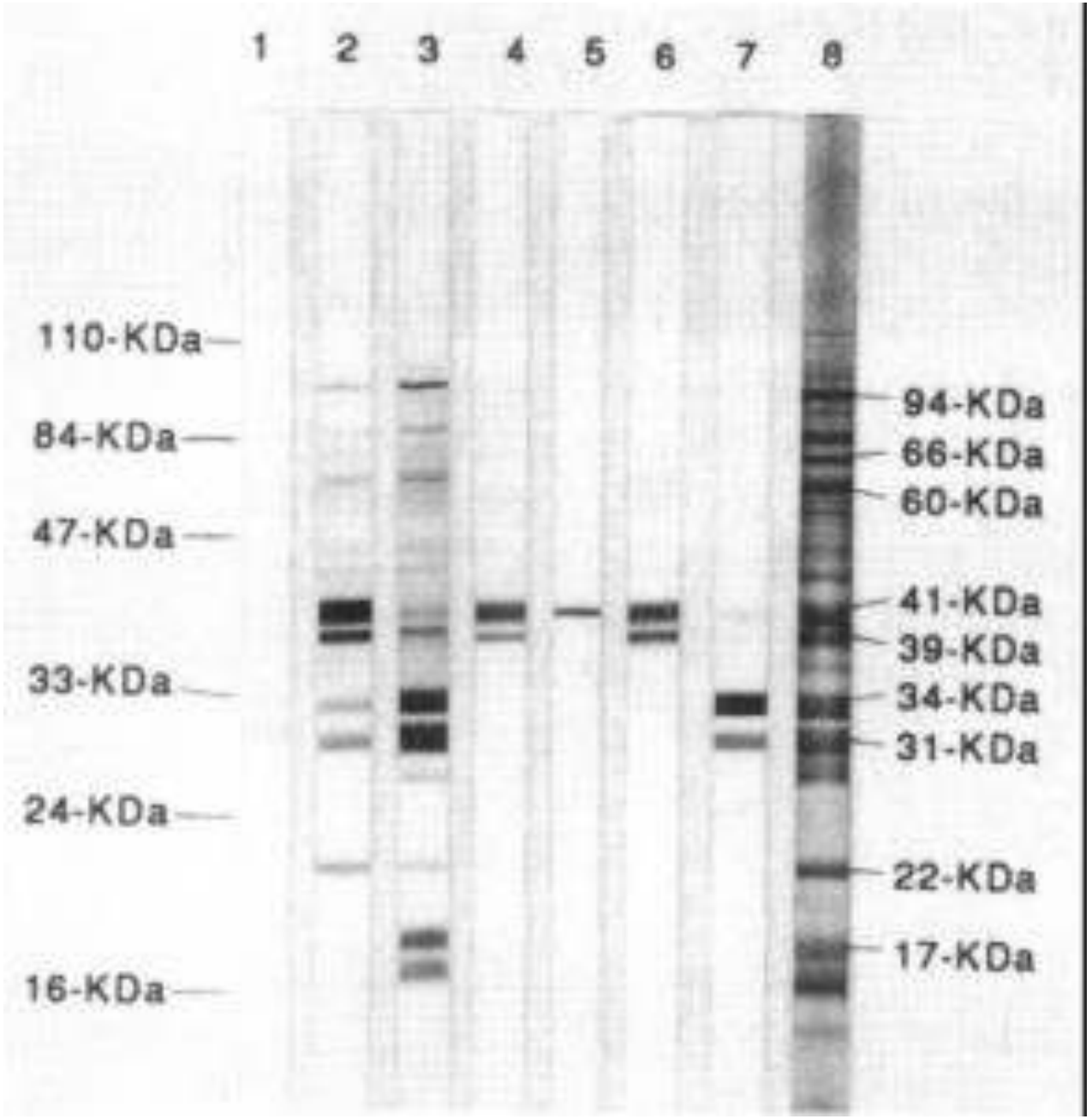
AAFP June 1, 2012 Volume 85, Number 11

False positive western blots - as high as 27.5%



False positive western blots can occur due to infections including Epstein Barr which is common and causes many similar symptoms. Over reading of faint or misaligned bands can also cause a negative test to be read as positive.

CMI December 2012 Volume 18, Issue 12, Pages 1236–1240



TION: A positive result for band 31 an
ated patients. Some viral antibodies c

e of only one double starred band or
licate clinical significance. We rec
or Lyme dot-blot or repeat testing 4

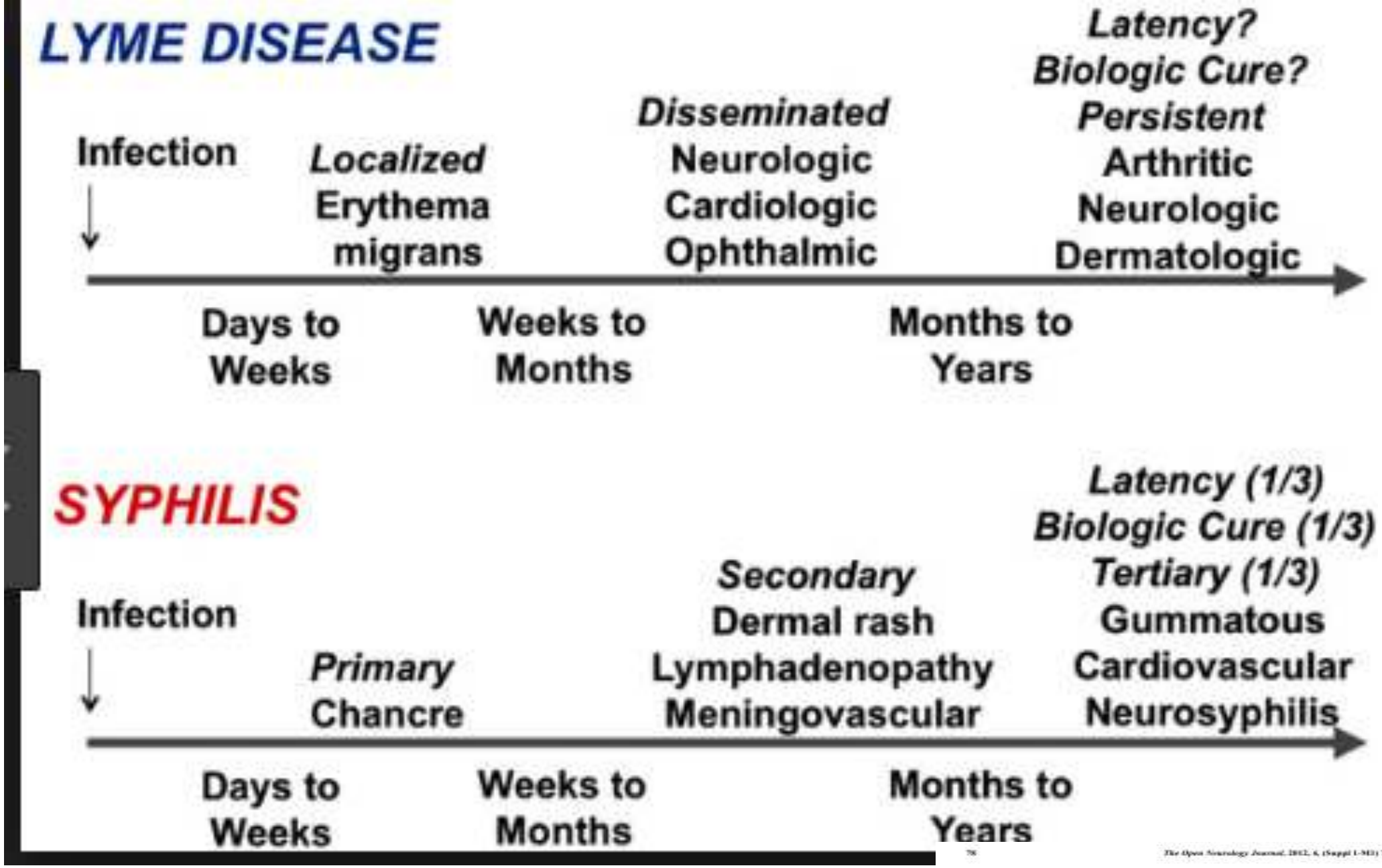
TENSITY: NEG(-)= No band detected;
; POS (1+ to 4+) = Band intensity >

X IGM RESULT	NEGATIVE
YS RESULT	NEGATIVE
18 kDa.	+
**23-25 kDa.	IND
28 kDa.	-
30 kDa.	-
**31 kDa.	IND
**34 kDa.	IND
**39 kDa.	IND
**41 kDa.	+++
45 kDa.	-
58 kDa.	++
66 kDa.	-
**83-93 kDa.	IND

should not be based on laborat
in conjunction with clinical

TANIDA AYIRT EDİCİ NOKTALAR:

- ERKEN DÖNEMDE SEROLOJİ NEGATİFLİĞİ
- AB KULLANMA
- EBV ENFEKSİYONLARINDA ÇAPRAZ REAKSİYON
- SEROLOJİ NEGATİF WB POZİTİF OLGULAR



Open Access

Editorial:

Chronic or Late Lyme Neuroborreliosis: Present and Future

Judith Miklossy*, Samuel Donta, Kurt Mueller, Oliver Nolte and George Perry

TEDAVİ

- 1. DÖNEMDE AB KULLANIMI
- 2. DÖNEMDE AB KULLANIMI
- 3. DÖNEMDE ANTİ İNFLAMATUVAR VE İMMUNOLOJİK KONULAR ÖN PLANDA

TEDAVİ SONUCU –POST LYME DİSEASES SENDROMU- AB KULLANIMI TARTIŞMALI

Outpatient or oral treatment regimens

Drug	Dose	Duration	*Anaplasma* coverage	*Babesia* coverage clindamycin plus quinine or atovaquone plus azithromycin
Doxycycline Do not use in children <8 or pregnant women	200mg/day 4mg/kg/day	14-21 days (10 is adequate for EM only)	YES	NO
Amoxicillin	1500mg/day 50mg/kg/day	14-21 days	NO	NO
Cefuroxime	1000mg 30mg/kg/day	14-21 days	NO	NO
*Arthritis	For Lyme arthritis 28 days of treatment is required, experts recommend retreatment with a second 28 day course if symptoms persist			

Shapiro. NEJM 370;18 May 1, 2014

Inpatient or IV treatment (usually for CNS or Cardiac)		
Drug	Dose	Duration
Ceftriaxone	2g/day 50-75mg/kg/day	10-28 days
Cefotaxime	6g/day 150mg/kg/day	10-28 days

ÇAĞIMIZIN VEBASI LYME HASTALIĞI

- Bölgemizde seroprevalans %12-19
- Ülkemizde bölgelere göre değişiyor.
- Klinik profil çok geniş
- Rutinde yapılan testler olmadığı için tanımakta zorlanıyoruz.
- FARKINDALIK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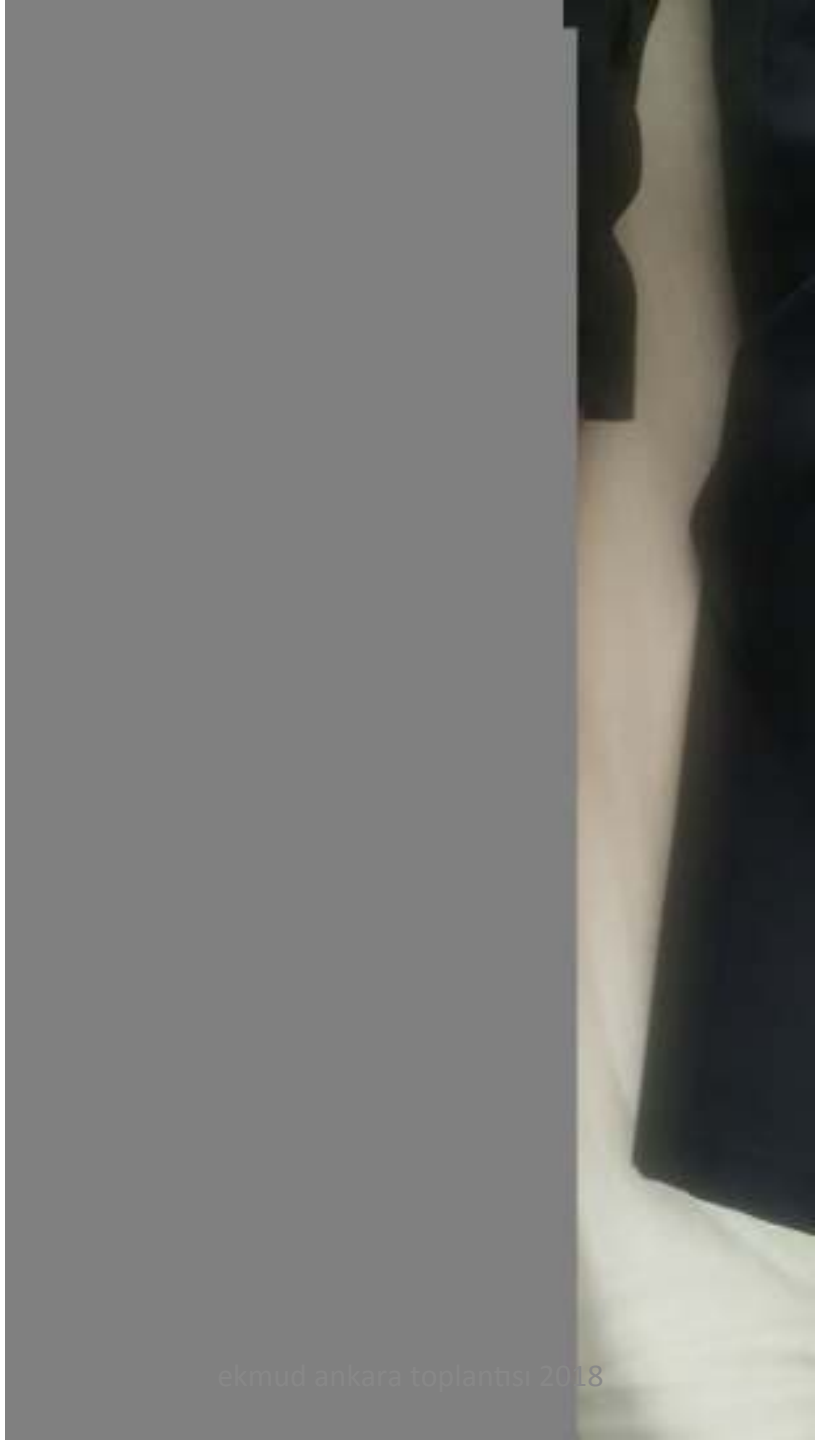

SON SÖZ:

- Hastalara iki kademeli testlerin yapılması (%88 karşı %43)

Molins CR, Clin Infect Dis 2015; 60:1767– 1775)

- Kesin bir tanı yöntemi halen geliştirilememiş. Sitokin ve metabolomik çalışmalar devam ediyor.