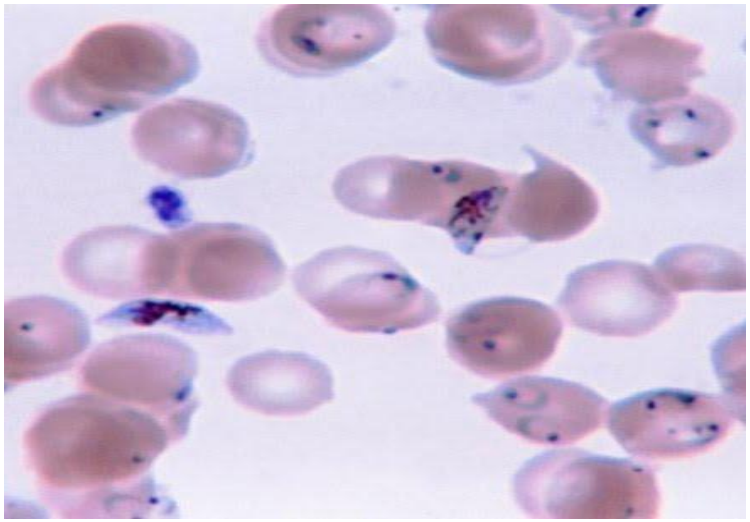
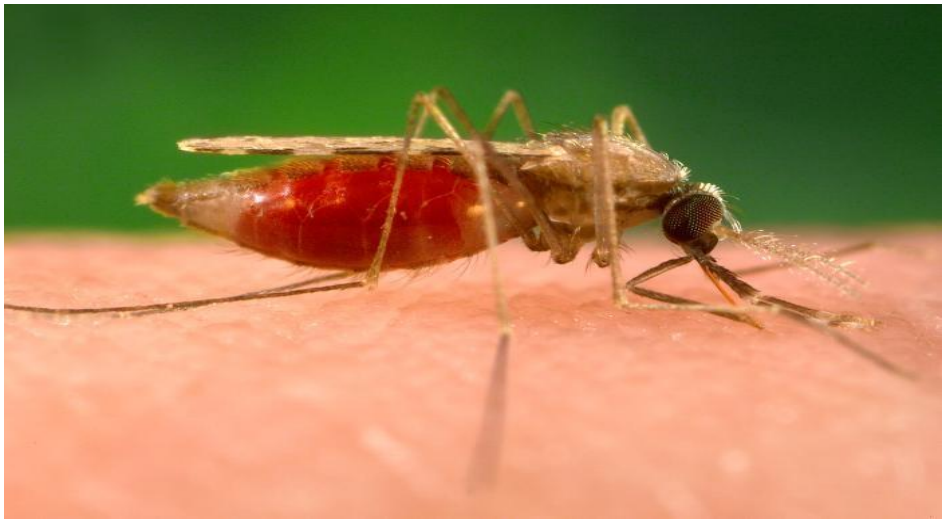




OLGULAR EŞLİĞİNDE YENİ İNFEKSİYONLAR

Doç. Dr. Ayten Kadanalı

Ümraniye Eğitim ve Araştırma Hastanesi, İstanbul

Olgu

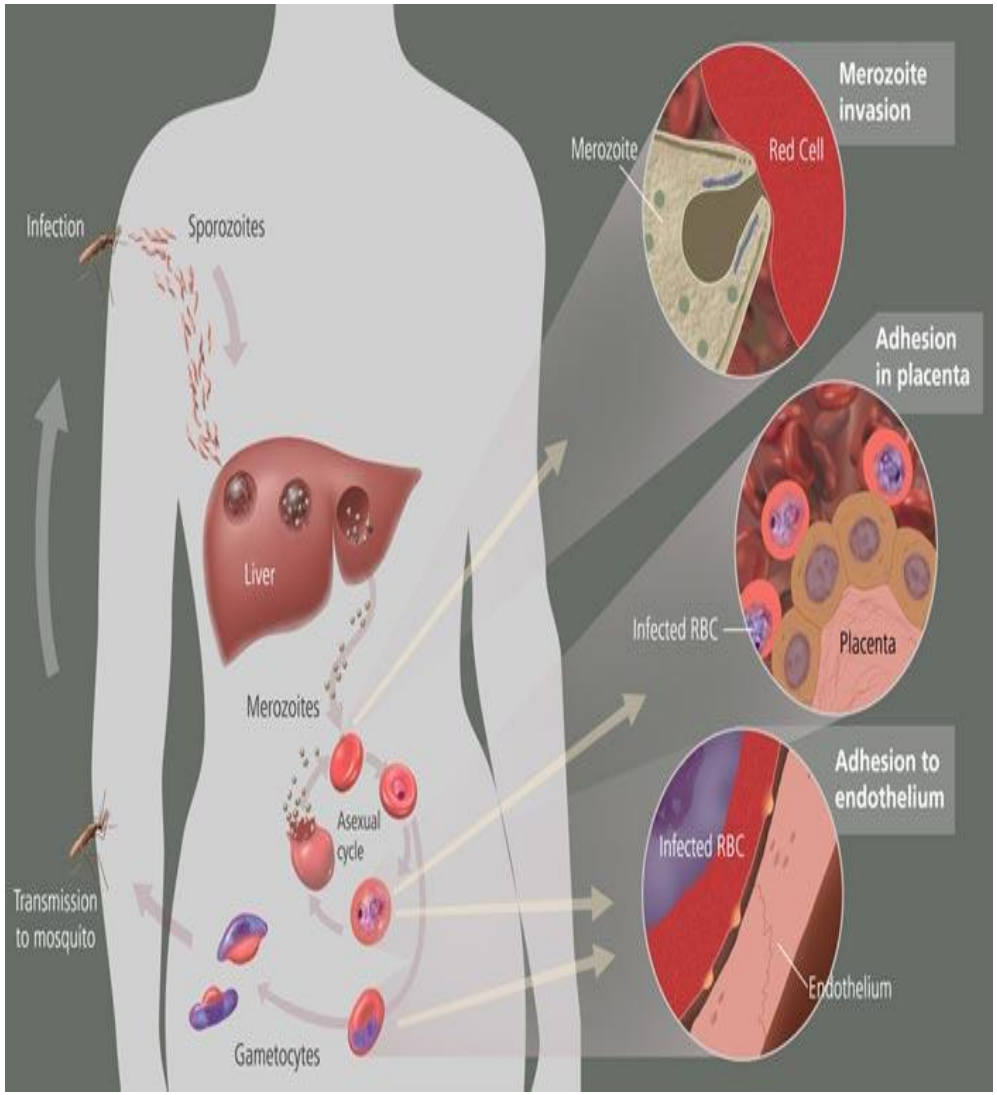
- 52 Y/E
- Şikayetler:

-Ateş yüksekliği

-Baş ağrısı

-Terleme

-İshal



Olgu

- Beş gün önce kırgınlık şeklinde başlamış
  İki gün önce
- Ateş
- Halsizlik
- Bulantı
- Kusma
- Öksürük
- Başağrısı eklenmiş.

Hikayesi

- Uganda'da iş amaçlı 6 ay kalıp 10 gün önce dönmüş
- Bu süre içerisinde belirgin bir şikayeti yok

Fizik Muayene

- Bilinci açık, genel durumu orta
- Vital bulguları; Ateş 39,5°C, Nabız 102/dk, kan basıncı 123/70 mmHg, solunum 32/dk
- Glaskov Koma Skoru: 14
- Cilt subikterik
- Karaciğer kot altını bir parmak geçiyor
- Traubesi kapalı
- Ense sertliği yok
- Kerning ve Brudzinski bulguları negatif

Lab.

TEDAVİ GÜNÜ/ KAN DEĞERİ	1.YATIŞ 1.GÜN	NORMAL ARALIKLAR
BEYAZ KÜRE	4.36	4.0-10.5x10^3/mm3
TROMBOSİT	22	150-450x10^3/mm^3
HEMOGLOBİN	13.6	13.5-18 gr/dl
ALT	97	5-40 U/L
AST	85	5-40 U/L
TOTAL BİLİRUBİN	2.70	0.2-1.2 mg/dl
İNDİREK BİLİRUBİN	1.60	0.1-0.3 mg/dl
ÜRE	105	15-44 mg/dl
KREATİNİN	1.54	0.6-1.4 mg/dl
ALBUMİN	4.09	3.5-5.0 g/dl
PTZ	14.8	10-14 sn
INR	1.35	0.8-1.2
ESH	24	0-15 mm/h
CRP	250	0-8 mg/dl
D-DİMER	4.32	0-0.55 mg/dl
FİBRİNOJEN	319	200-400 mg/dl

Laboratuvar Bulguları

- PA AC Grafisi- EKG: normal

- YBÜ izolasyon odasına yatırıldı
- Hastaya destek tedavisi ve doksisiklin tb 100 mg başlandı

Ayrıntılı anamnezde:

- Uganda'da kaldığı yaklaşık 6 ay içinde sadece 2 hafta antimalaryal profilaksi almış

Kalın damla:

Çok sayıda halka şeklinde trofozoitler

İnce damla:

Eritrosit hücresi içerisinde çok sayıda halka formasyonları

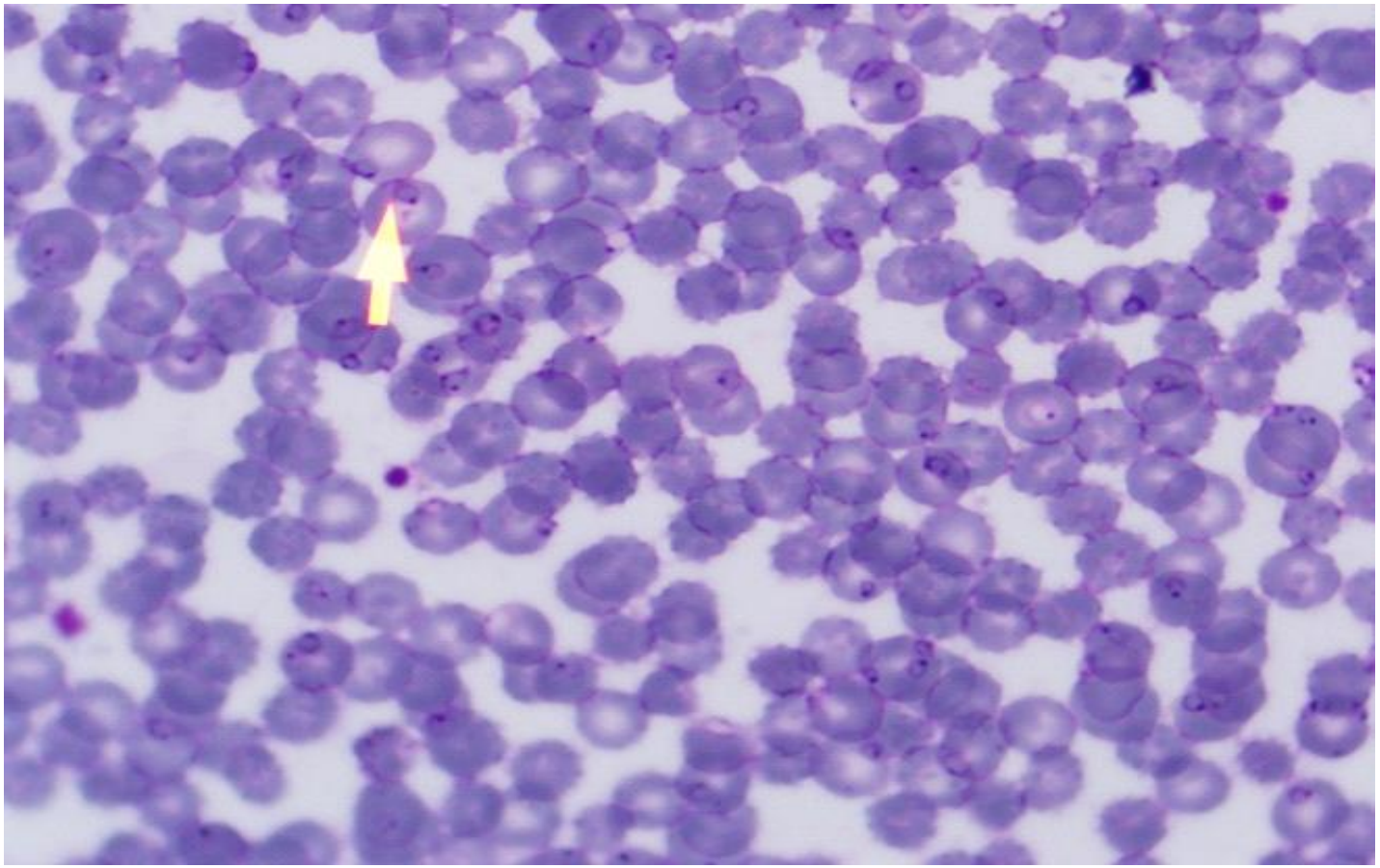
Eritrositlerin boyutlarının değişmemiş olması

Parazitemi oranının yüksek (yaklaşık %40)

Hiperendemik bölgeden gelmesi

P. falciparum'a bağlı sıtma tanısı konuldu

RESİM 1: İlk atak tedavisinin 1. günü



Yatışının ilk akşamı

Sıtma Savaş Merkezi ile temasla

Komplike olmayan P. falciparum sıtma

- Artemether/lumefantrin
- Destek tedavisi

Yatışının ikinci akşamı

- Ateşi 39 °C nin üzerinde
- GD orta
- Letarjik
- GKS:8
- APACHE II :21

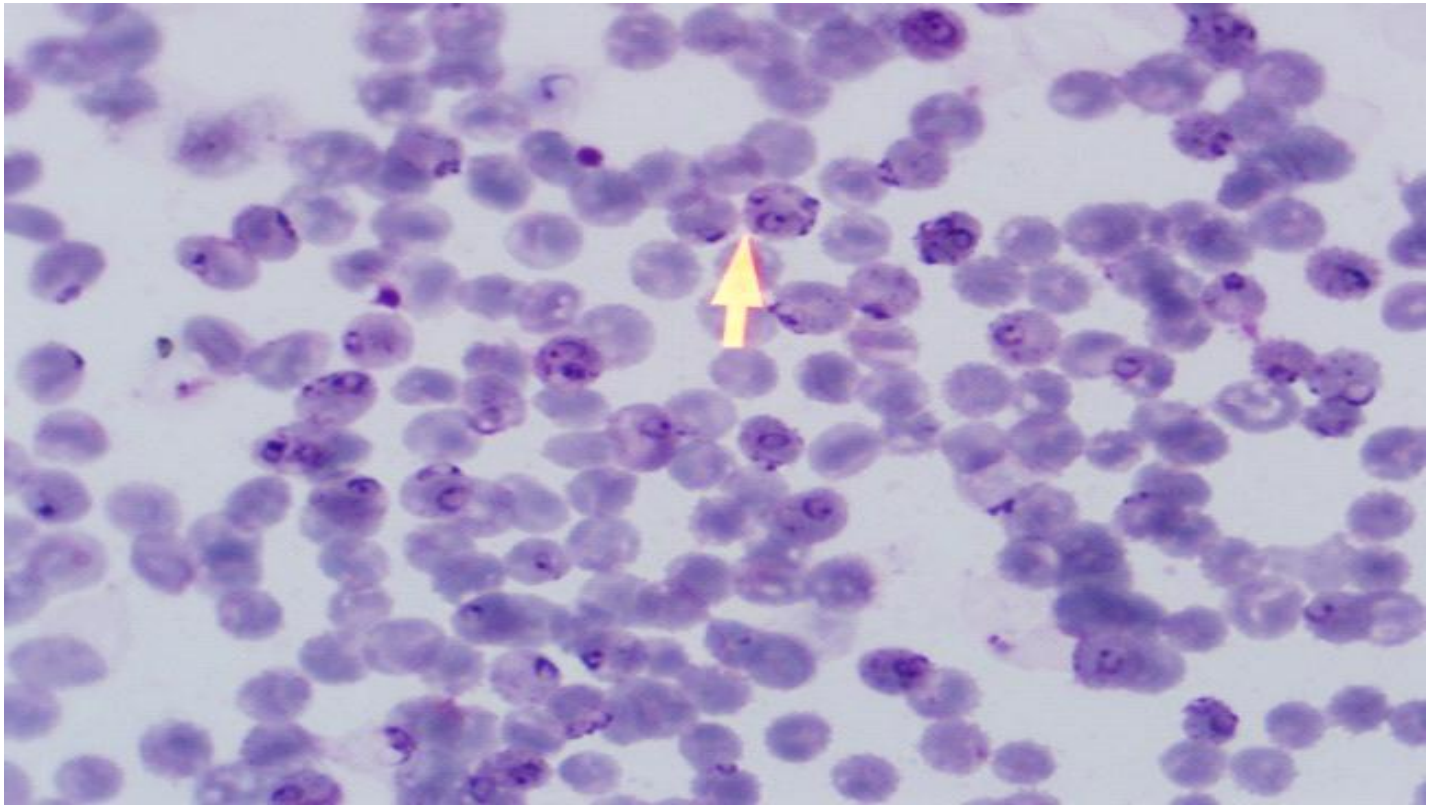
Lab.

TEDAVİ GÜNÜ/ KAN DEĞERİ		NORMAL ARALIKLAR
TOTAL BİLİRUBİN	11.7	0.2-1.2 mg/dl
İNDİREK BİLİRUBİN	5.41	0.1-0.3 mg/dl
LDH	2157	mg/dl
CRP		
D-DİMER	16.36	0-0.55 mg/dl
FİBRİNOJEN	363	200-400 mg/dl

Lab.

- TİT:
- Çay rengi
- +2 pozitif ürobilinojen
- +2 pozitif eritrosit

RESİM 2: İlk atak tedavisinin 2.günü

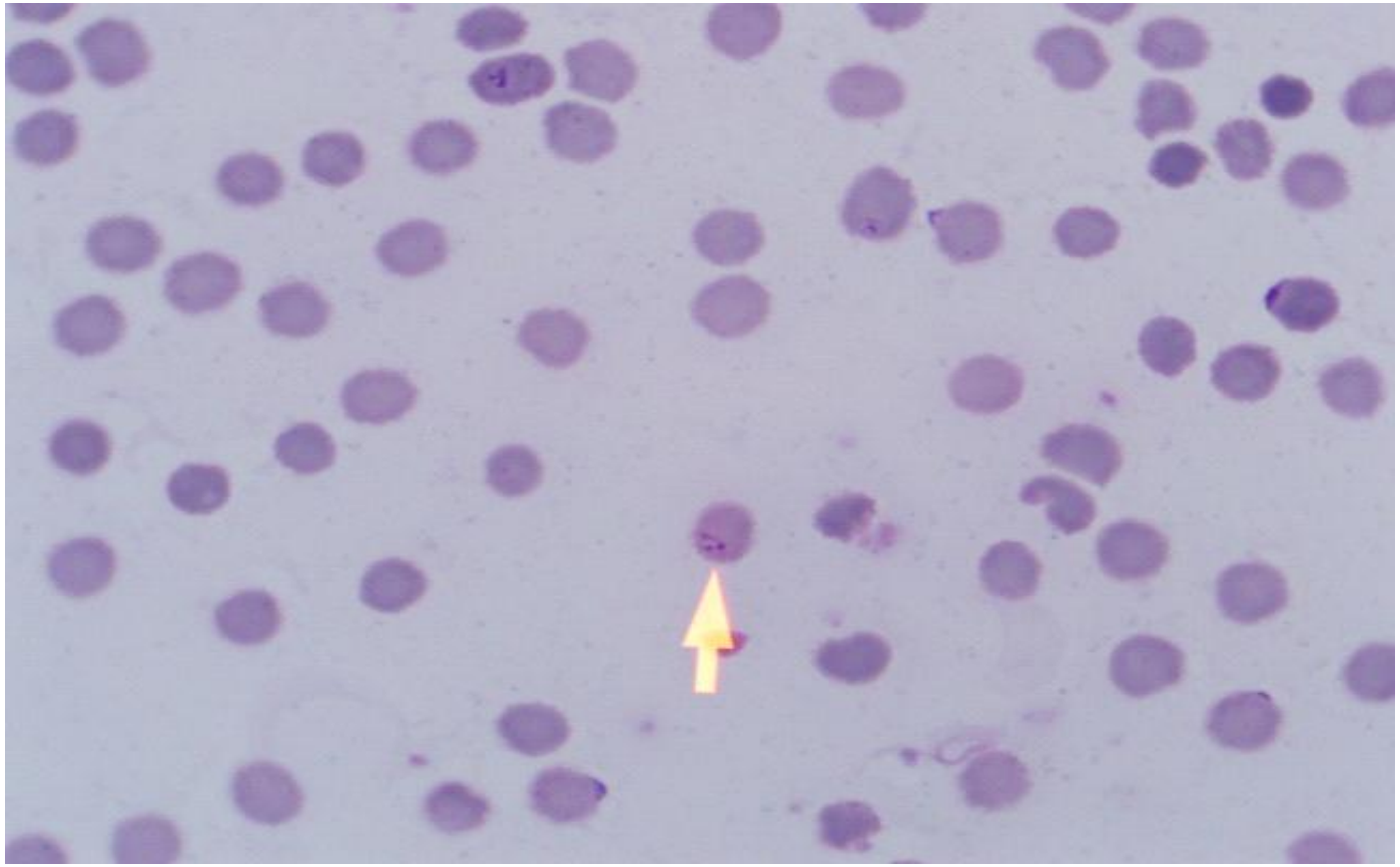


Parazit yükü %5

Yatışının üçüncü günü

- Şuuru açık, oryante, koopere
- Ateş N
- Vital bulguları stabil
- Parazit yükü %1'in altı
- Artemether 20 mg - lumefantrin 120 mg tedavisi üçüncü ve son doz
- İnfeksiyon servisine alındı.

RESİM 3: İlk atak tedavisinin 3.günü



Parazit yükü %1

- Beyin MR Normal
- Hasta şifa ile kontrol önerilerek taburcu

Hastanın ilk atak lab.

TEDAVİ GÜNÜ/ KAN DEĞERİ	1.YATIŞ 1.GÜN	1.YATIŞ 3.GÜN	1.YATIŞ 7.GÜN	NORMAL ARALIKLAR
BEYAZ KÜRE	4.36	8.09	8.43	4.0-10.5x10^3/mm3
TROMBOSİT	22	53.5	537	150-450x10^3/mm^3
HEMOGLOBİN	13.6	9.31	9.94	13.5-18 gr/dl
ALT	97	94	54	5-40 U/L
AST	85	126	39	5-40 U/L
TOTAL BİLİRUBİN	2.70	10.06	1.50	0.2-1.2 mg/dl
İNDİREK BİLİRUBİN	1.60	5.00	1.00	0.1-0.3 mg/dl
ÜRE	105	127	24	15-44 mg/dl
KREATİNİN	1.54	1.21	1.05	0.6-1.4 mg/dl
ALBUMİN	4.09	2.95	3.67	3.5-5.0 g/dl
PTZ	14.8	12.7	14.03	10-14 sn
INR	1.35	1.15	1.28	0.8-1.2
ESH	24	32	46	0-15 mm/h
CRP	250	206	43	0-8 mg/dl
D-DİMER	4.32	16.36	3.87	0-0.55 mg/dl
FİBRİNOJEN	319	307	210	200-400 mg/dl

İkinci Başvuru

- 18 gün sonra ateş
- Üşüme, titreme, terleme şikayetleri
  İnfeksiyon hastalıkları polikliniğe başvuru
- Ateş 40,1°C
- Nabız 123/dk
- TA: 120/70 mmHg
- Solunum dakika sayısı : 30
- GKS : 14

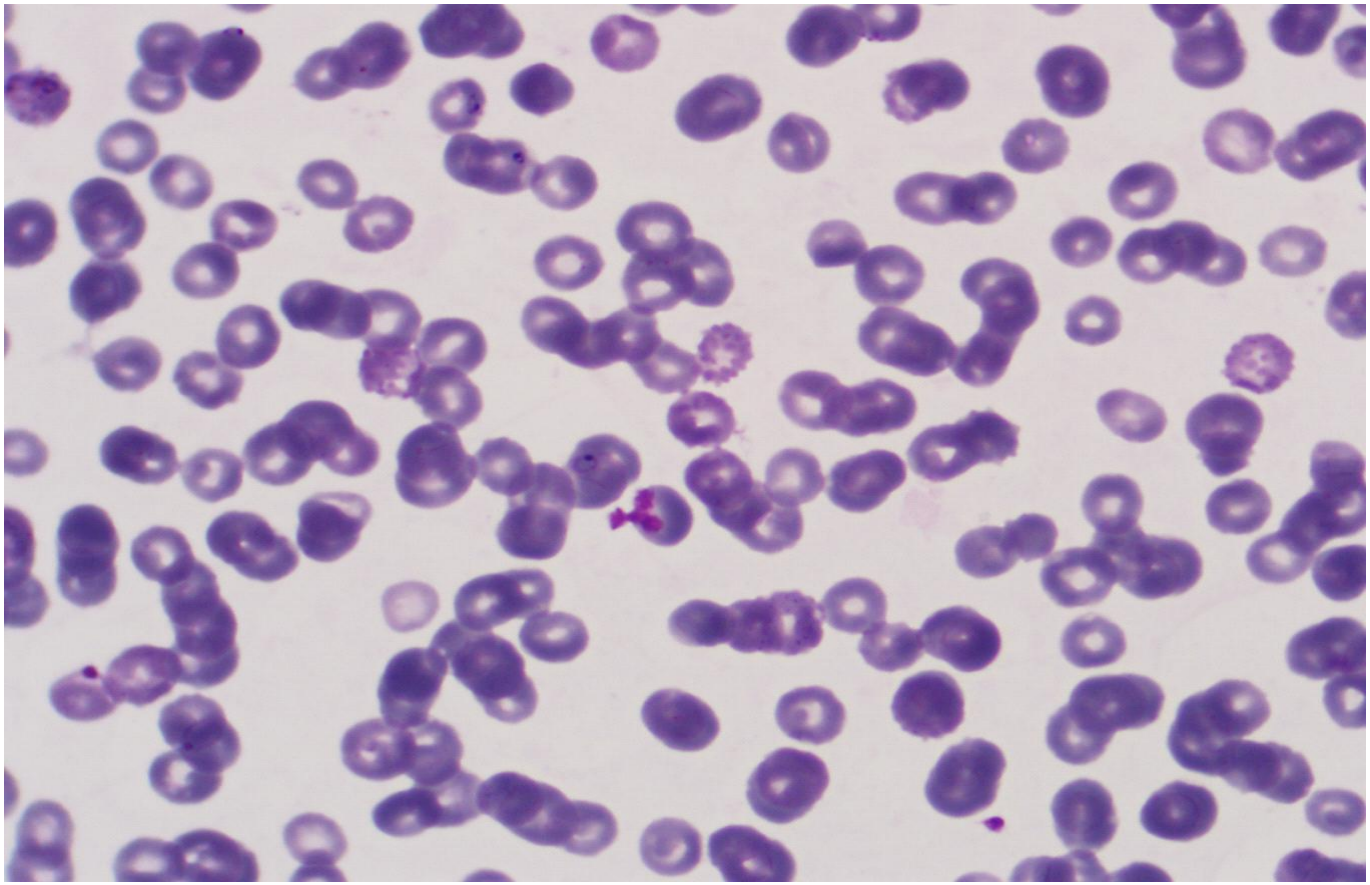
Fizik muayene

- Traubesi kapalı
- Diğer sistem muayeneleri nonspesifik

Lab.

TEDAVİ GÜNÜ/ KAN DEĞERİ	2.YATIŞ 1.GÜN	NORMAL ARALIKLAR
BEYAZ KÜRE	6560	4.0-10.5x10^3/mm3
TROMBOSİT	219000	150-450x10^3/mm^3
HEMOGLOBİN	11.6	13.5-18 gr/dl
ALT	29	5-40 U/L
AST	44	5-40 U/L
TOTAL BİLİRUBİN	1.44	0.2-1.2 mg/dl
ÜRE	38	15-44 mg/dl
KREATİNİN	1.26	0.6-1.4 mg/dl
ALBUMİN	4.09	3.5-5.0 g/dl
ESH	46	0-15 mm/h
CRP	70	0-8 mg/dl

- Kan ve idrar kültürleri alındı
- kalın ve ince yaymalarında parazitlere ait ring formasyonları tekrar görüldü



TANI

- rekürrens

veya

- P.ovale veya P.vivax ile kombine olmuş olası miks sıtma tablosu düşünülüp destek amaçlı Sıtma Savaş Merkezi ile tekrar temasa geçildi.
- P.vivax ve P.ovale düşünülmedi.
- Yayma incelemelerinde falciparum halka formlarının tekrar görüldüğü belirtildi

TEDAVİ

- Kinin-sülfat 300 mg tablet (3x2 tb/gün)

ve

- tetrasiklin hidr. 250 mg tb (4x250mg/gün)

Yatışından 12 saat sonra ateş yanıtı alındı

Kan ve idrar kültürlerinde üreme yok

Tedavisi 7 güne tamamlanan hasta şifa ile taburcu

Sıtma

- Plasmodium cinsi parazitler
- Enfekte dişi anofel cinsi sivrisinek

İnsanda enfeksiyona neden olan sıtma parazitleri

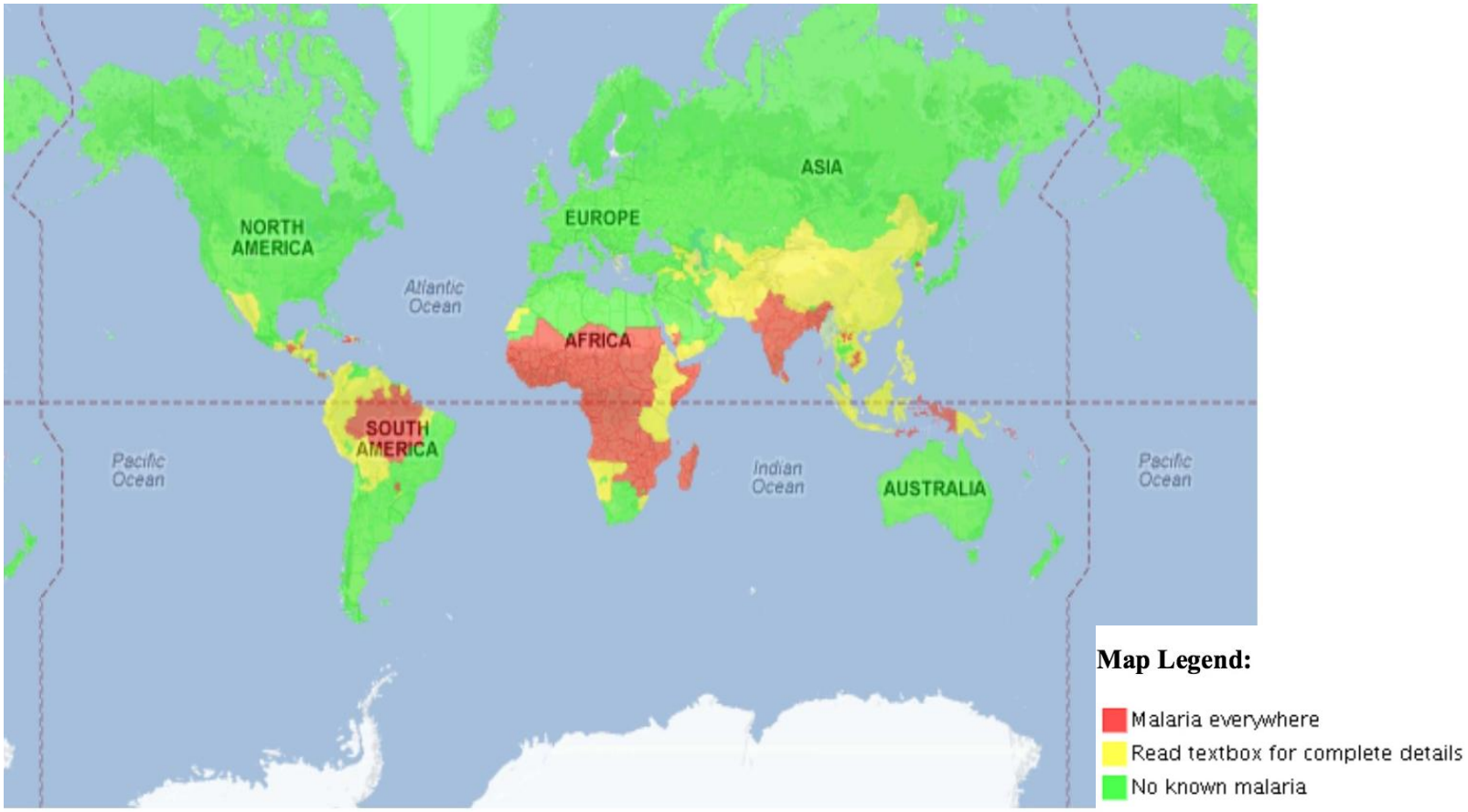
- ✓ P.vivax
- ✓ P.ovale
- ✓ P.falciparum
- ✓ P.malariae
- ✓ P. knowlesii


CDC
DEPARTMENT OF HEALTH & HUMAN SERVICES · USA


M. H. GOODWIN, JR.
LARVICIDING
MALARIA
TOOLS TO INVESTIGATE WORKPLACE
08/02/2012


Thank you!
The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
08/03/2012

CDC Malaria Map



World Health Organization

SIXTY-SIXTH WORLD HEALTH ASSEMBLY
Provisional agenda item 16.3

A66/21
22 March 2013

Malaria

Report by the Secretariat

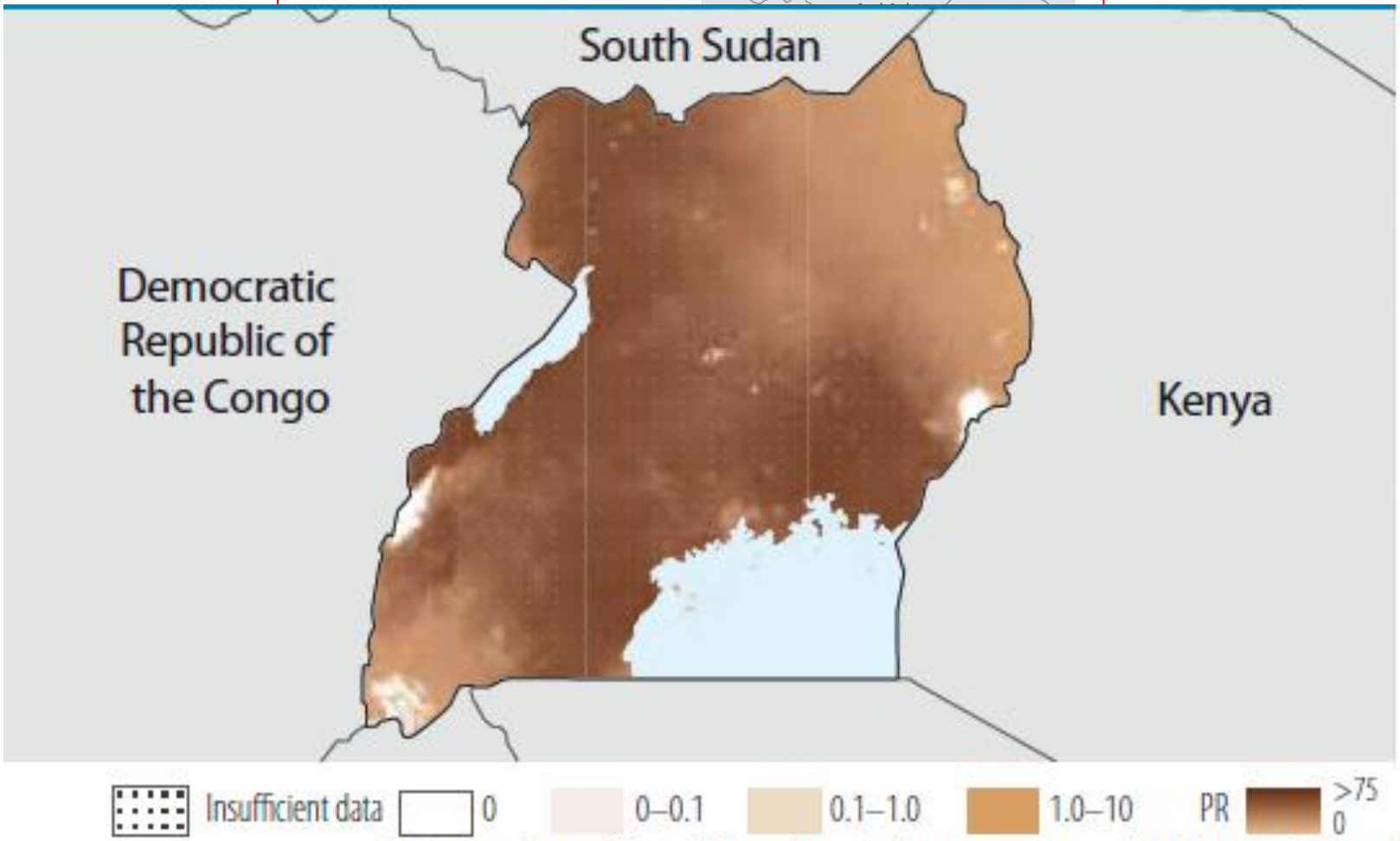
- 3.300 milyar insan malarya riski altında
- % 90 malarya ilişkili ölüm sahra altı Afrikada 5 yaş altı çocuklarda

Table 8.2 WHO estimates of the number of malaria cases and deaths in 2010

Region	Estimated cases ('000s)				Estimated deaths			
	Estimate	Lower	Upper	% *falciparum*	Estimate	Lower	Upper	% <5
African	174 000	110 000	242 000	98%	596 000	429 000	772 000	91%
Region of the Americas	1 100	900	1 300	35%	1 100	700	1 800	29%
Eastern Mediterranean	10 400	6 400	16 600	83%	15 300	7 200	23 500	70%
European	0.2	0.2	0.2	–	0	0	0	–
South-East Asia	32 000	25 900	41 900	53%	43 000	31 100	60 300	32%
Western Pacific	1 700	1 300	2 100	79%	4 000	2 400	6 100	41%
World	**219 000**	**154 000**	**289 000**	**90%**	**660 000**	**490 000**	**836 000**	**86%**

World Malaria report, 2011

- Dünyada yılda bir milyondan fazla insanın ölümü
- Sahra altı Afrika, 2011 yılında
- yaklaşık 225 milyon klinik vaka, 665 bin ölüm



Parasites and vectors

Major plasmodium species:	*P. falciparum* (100%), *P. vivax* (0%)
Major anopheles species:	*An. gambiae, funestus*

Avrupa??

- Gürcistan
- Kırgızistan
- Tacikistan
- Türkiye

dışında Avrupa ülkelerinde malarya eradike edilmiş

World Malaria report, 2011

Avrupa'dan 25-30 milyon kişi/yıl malarya endemik bölgelere seyahat

- Fransa, İngiltere, Almanya
- 1972-1500
- 1988- 12000
- 2000- 15500 import malarya vakası

  Sabatinelli G, Malaria in the WHO European Region, Euro Surveill ,2001

- Airport Malarya

  Thang HD, Airport malaria, Neth J Med, 2002
  Tatem AJ, Malar J, 2006

- Baggage Malarya

  Castelli F, Am J Trop Med Hyg, 1994

- İV ilaç bağımlıları
- Organ nakli……

- En ağır klinik tablo ve ölümler P.falciparum'da
- Ülkemizde en sık P.vivax
- Çok sayıda yurt dışı kaynaklı P.falciparum olgusu

- Uganda’da Dünya Sağlık Örgütü (DSÖ) raporlarına göre, olgularda etken P.falciparum

World Health Organization. World Malaria Report. 2011

- Klorokin dirençli falsiparum sıtması yaygın

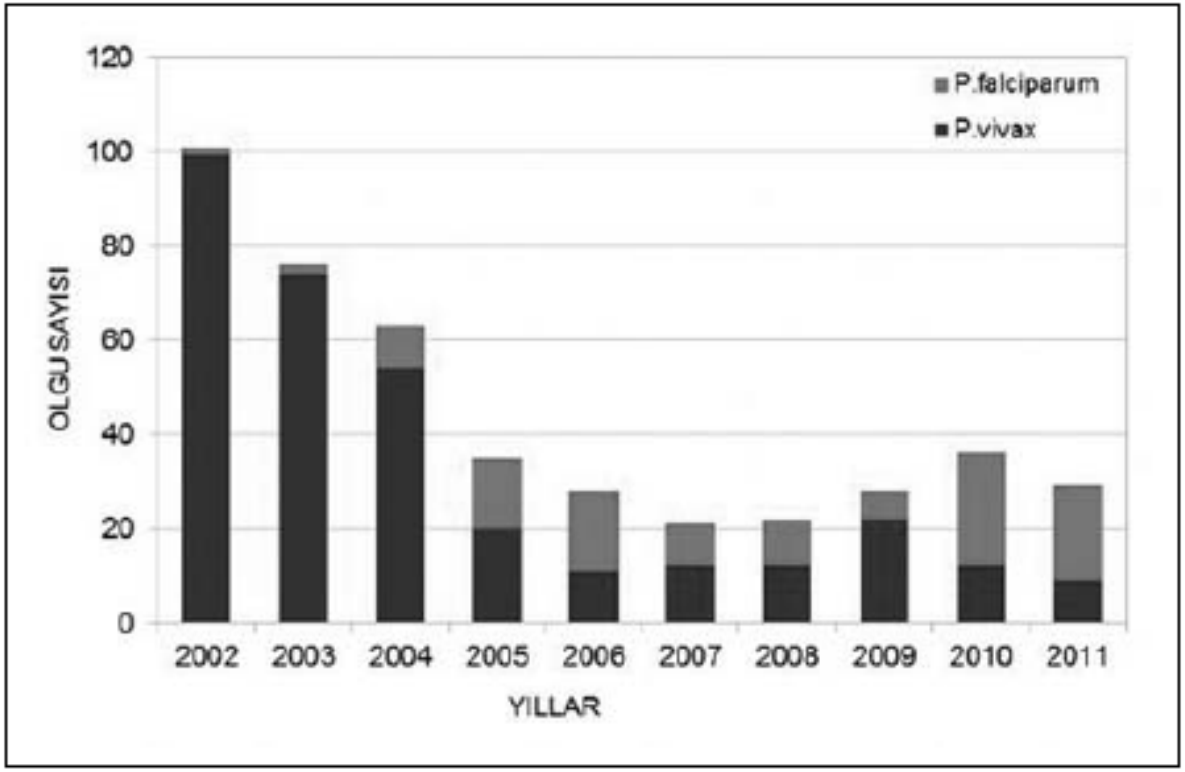
Fairhurst RM, Plasmodium species (Malaria), Mandell GL, 2010

- İstanbul'da 2002-2011 yılları arasında
- 155.234 kan örneği
- 439 plasmodium etkeni saptanmış
- Bunların 324'ünde *P. Vivax*, 115'inde *P.falciparum* tespit edilmiş,
- Falsiparum sıtmalarının 113'ü import vaka

Bunun nedeni;

- İstanbul'a yurtdışından gelen Afrikalı göçmenler
- Endemik bölgelerden gelen turistler
- Yurtdışına giden yerli turistlere bağlanmış

Şatana NZ, Sağlık B. verileri.2012



Şekil 2. İstanbul'da tespit edilen sıtma olgularında yıllara göre etken dağılımı.

Şatana NZ, 2012

CHAPTER 6

Diagnostic testing and treatment of malaria

This chapter (i) quantifies needs for malaria diagnostic testing and treatment; (ii) reviews the extent to which national programmes have adopted policies for universal diagnostic testing of suspected malaria cases and trends in the availability and utilization of parasitological testing; (iii) reviews the adoption of policies and implementation of programmes to expand access to, and utilization of, effective treatment for malaria; (iv) reviews the progress made in withdrawing oral artemisinin-based monotherapies from the market; (v) reviews the current status of drug efficacy monitoring and the latest trends in antimalarial drug resistance; and (vi) reviews efforts to contain artemisinin resistance.

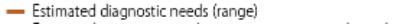
6.1 Needs for diagnostic testing and treatment

WHO recommends that all persons of all ages in all epidemiological settings with suspected malaria should receive a parasitological confirmation of diagnosis by either microscopy or rapid diagnostic test (RDT), and that uncomplicated *P. falciparum* malaria should be treated with an ACT (*1*). WHO guidance for quantifying, at the national programme level, diagnostic needs using malaria surveillance data[1] and treatment needs based on malaria morbidity[2] can be used to assess the scale of global and regional diagnostic and treatment needs that follow from this policy recommendation.

To estimate diagnostic needs by WHO Region, the number of with suspected malaria who receive a diagnostic test and have confirmed malaria, and the proportion treated for malaria without diagnostic testing (*2*). Another factor to be taken into account is the proportion of patients with suspected malaria presenting for care at public and at private health facilities, as the proportion receiving a diagnostic test differs by health sector and by Region. In this analysis, in order to estimate total treatment needs, the proportion of persons who report not seeking treatment for fever are apportioned to public and private treatment according to the proportions among those who do seek care. The proportion tested at public facilities can be calculated from national programme data. Data on the extent of diagnostic testing of suspected malaria cases in the private sector are more limited, but can be derived from household surveys. In household surveys conducted by ACTwatch during 2008-2010 in 6 African countries (*3*), the proportion of suspected malaria cases tested in the private sector was approximately one third of that tested in the public sector.

Taking these factors into account, the estimated number of suspected malaria cases which require diagnostic testing is large and varies by WHO Region, from as many as 1 billion in the South-East Asia Region to just over one million in the European Region (Figure 6.1). Treatment needs based on current levels

Figure 6.1 Estimated malaria diagnostic and treatment needs, by WHO Region, 2010



World Malaria Report, 2012

6.2 Parasitological diagnosis

The changing epidemiology of malaria and the introduction of ACTs have increased the urgency of improving the specificity of malaria diagnosis. Parasitological diagnosis has the following advantages:

- improved patient care in parasite-positive patients;
- identification of parasite-negative patients in wh
- prevention of unnecessary use of antima

Parazitolojik tanı 2 saaten kısa sürede konmalı,
Parazitolojik tanı konamıyor veya gecikme oluyorsa ağır sıtma olguları klinik tanı ile tedavi edilmelidir

ed for other common causes of
pends entirely on health-care providers
patient, except where the severity of the disease justifies the use of antimalarials in test negative cases, considering the possible small risk of false negative tests. The risk of false negative microscopy is higher if the patient has received a recent dose of an artemisinin derivative.

The results of parasitological diagnosis should be available within a short time (less than two hours) of the patient presenting. In the absence or delay of parasitological diagnosis, patients with suspected severe malaria, and other high risk groups, should be treated immediately on clinical grounds.

Guidelines for treatment of malaria, 2010

Parazitolojik tanı

- Kalın damla ve ince yayma… Altın Standart
- 5 parazit/ mikrolitre tanınabilir

- Günlük yayma negatif aseksüel parazit (halka, trofozoid, şizont) saptanana kadar yapılmalı
- Gametosit aseksüel parazitemi sonrası kalabilir

Askling HH, Malaria J, 2012

Hızlı Tanısal testler (RDT)

-Yüksek parazit dansitesi
- HRP2 mutsyonları

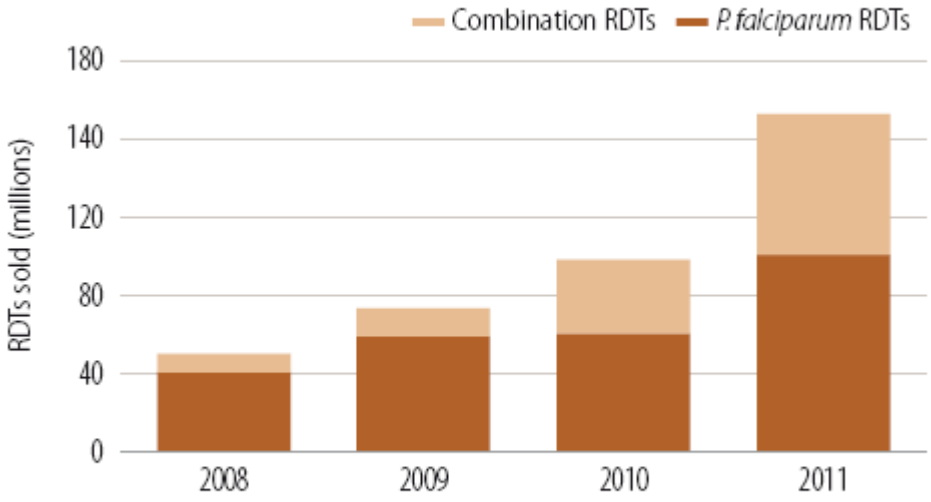
} Yanlış negatif

- RF varlığında yanlış pozitif
- HRP2 ve pan plazmodyal protein kombinasyonu en iyi performans

WHO, Rapid Diagnostic Tests, 2012

- Yayma ile birlikte değerlendirilmeli

Figure 6.3 RDT sales to public and private sectors, 2008–2011



Source: Data provided by 36 manufacturers eligible for the WHO Malaria RDT Product Testing Programme

- Parazitolojik testlerin % 6’ sı RDT

Komplike olmayan malarya
Vital organ disfonksiyonu yok
Semptom ve bulgular nonspesifik
Ateş önemli

Guidelines for the treatment of malaria, 2010

Komplike Sıtma

- **P.falciparum-ciddi/ağır sıtma**

Vital organ yetmezliğine ait klinik ve laboratuvar bulgularından bir/ ↑

Guidelines for the treatment of malaria, 2010

Komplike Sıtma

Klinik bulgular

- Bilinç bulanıklığı ya da koma,
- Yardımsız ayağa kalkamama,
- Oral alamama,
- 24 saatte ikiden fazla konvülziyon,
- Asidotik solunum,
- Hipotansiyon,
- Klinik sarılıkla birlikte diğer vital organ disfonksiyonu,
- Hemoglobinüri,
- Anormal spontan kanama,
- Pulmoner ödem

Guidelines for the treatment of malaria, 2010

Komplike Sıtma

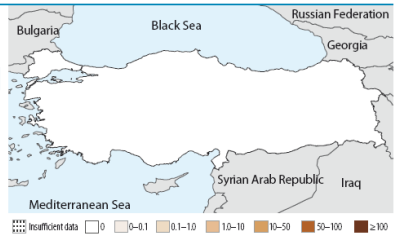
Laboratuvar bulguları

- Hipoglisemi (< 40 mg/dl),
- Metabolik asidoz (plazma HCO_3< 15 mmol),
- Ciddi normositer anemi (Hb < 5 g/dl),
- Hemoglobinüri,
- Hiperparazitemi (> %5),
- Hiperlaktatemi,
- Renal yetmezlik (kreatinin > 265 µmol/l)

Turkey

European Region

Phase: Elimination. Impact: >75% decrease in case incidence 2000–2011. Along with imported cases 4 relapses of P. vivax were reported in the country in 2011. The national malaria elimination strategy aims for interruption of malaria transmission by 2012.



Distribution of confirmed malaria cases (per 1 000 population)

I. Epidemiological profile

Population (UN Population Division)	2011	%
Number of active foci	0	
Number of people living within active foci	0	
Number of people living in malaria-free areas	73 600 000	100
Total	73 600 000	

Parasites and vectors

Major plasmodium species: *P. vivax* (0%)
Major anopheles species: *An.sacharovi, superpictus*

II. Intervention policies and strategies

Intervention	WHO-recommended policies/strategies	Yes/No	Year adopted
ITN/LLIN	ITNs/LLINs distributed free of charge	No	–
	ITNs/LLINs distributed to all age groups	No	–
IRS	IRS is recommended	Yes	1926
	DDT is used for IRS	No	–
Case management	Malaria diagnosis is free of charge in the public sector	Yes	1926
	Gametocidal treatment of *P.falciparum* cases	Yes	–
	Radical treatment of *P. vivax* cases	Yes	1926
Surveillance	Foci and case investigation undertaken	Yes	1926
	Case reporting from private sector is mandatory	Yes	1926

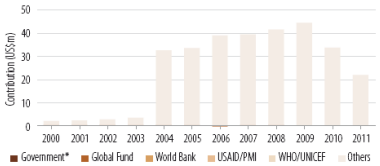
Antimalaria policy	Medicine	Year adopted
First-line treatment of unconfirmed malaria	-	–
First-line treatment of *P. falciparum*	–	–
For treatment failure *of P. falciparum*	–	–
Treatment of severe malaria	–	–
Treatment of *P. vivax*	CQ+PQ(14d)	–

Therapeutic efficacy tests (clinical and parasitological failure, %)

Medicine	Year	No. of studies	Min	Median	Max	Follow-up

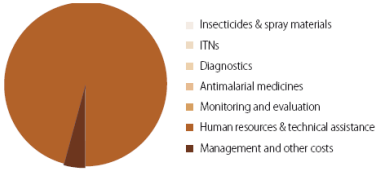
III. Financing

Government and external financing



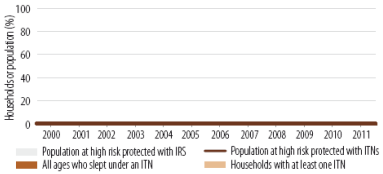
* Expenditure: costs for sub-national level, health systems, human resources, etc not included.

Expenditure by intervention in 2011

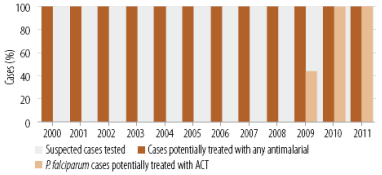


IV. Coverage

Coverage of ITN and IRS

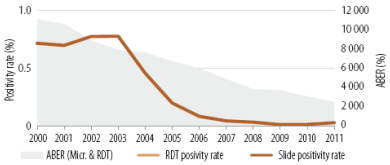


Cases tested and antimalarials delivered: Programme data (public sector)

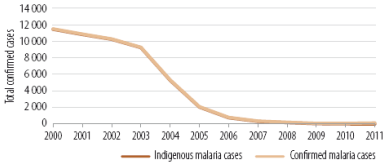


V. Impact

Malaria test positivity rate and ABER



Microscopically confirmed malaria cases and indigenous cases



Tedavi

- Antiparaziter Tedavi

- Destek Tedavisi

Tedavi

- **Komplike olmayan falsiparum sıtması**

Birinci Seçenek tedavi

- Artemer/ lumefantrin---------- Direnç!! Atovakon /proguanil
- Artesunat/amodiakin
- Artesunat/meflokin
- Artesunat/sulfadoksin-primetamin
- Dihidroartemisinin/piperakin

Guidelines for The Treatment of malaria

Üç gün içinde parazitolojik kür sağlanmalı

Askling HH, Malaria J, 2012

Tedavi

İkinci Seçenek Tedavi

- Bölgede etkili alternatif bir artemisin bazlı kombinasyon tedavisi

veya

- Artesunat+ tetrasiklin veya doksisiklin veya klinda.
- Kinin + tetrasiklin veya doksisiklin veya klinda.

7 gün

Am. J. Trop. Med. Hyg., 82(1), 2010, pp. 140–144
doi:10.4269/ajtmh.2010.09-0265

A Randomized Trial of Artesunate Mefloquine versus Artemether Lumefantrine for the Treatment of Uncomplicated *Plasmodium falciparum* Malaria in Senegalese Children

Babacar Faye,* Jean Louis Ndiaye, Roger Tine, Khadim Sylla, Ali Gueye, Aminata Colle Lô, and Oumar Gaye

Department of Parasitology, Faculty of Medicine, University Cheikh Anta Diop, Dakar, Senegal

Abstract. An open randomized clinical trial study was carried out to compare efficacy and tolerability of artesunate mefloquine 25 mg/kg body weight (Artequin paediatric) versus artemether lumefantrine (Coartem) in the treatment of uncomplicated *Plasmodium falciparum* malaria in children. In each arm, 160 patients were assigned to receive either AS + MQ or AL with 28 days follow-up. The adequate clinical and parasitological response at Day 28 for per protocol analysis was after polymerase chain reaction correction, 100% for AS + MQ and 96.8% for AL. In the intention-to-treat analysis, the respective cure rates were 96.2% for AS + MQ and 93.7% for AL. No serious adverse events (AEs) were reported. The most frequent AE was vomiting, 30% in AS + MQ arm and 36% in AL arm. No biological significant abnormal values related to the study drug have been reported. The new pediatric artesunate mefloquine formulated in granule fixed dose combination is well adapted to children in Africa.

Tedavi

- Ağır falsiparum sıtmalı olgular

İntravenöz, Artesunat veya kinin

Ağır falsiparum sıtmalı olgular Tedavi

- IV Artesunat alan hastalar 2kez/hafta

4 hafta süre Lökopeni ve hemoliz takip

- IV Kinin 4 saat üzeri yavaş infüz.

- EKG
- Kan düzeyi
- QT % 25 uzama kontrindk.
- Karasu humması, hipersensitivite, kardiyak aritmi kesin Kİ

Ağır falsiparum sıtmalı olgular
Tedavi

- Parazitemi %1'den az
- Oral alım var

} Oral ACT
Kinin-antibiyotik

Meflokin serebral malaryada kullanılmamalı

Askling et al. Malaria Journal 2012, 11:328
http://www.malariajournal.com/content/11/1/328

MALARIA JOURNAL

REVIEW Open Access

Management of imported malaria in Europe

Helena H Askling[1,2], Fabrice Bruneel[3], Gerd Burchard[4], Francesco Castelli[5], Peter L Chiodini[6], Martin P Grobusch[7], Rogelio Lopez-Vélez[8], Margaret Paul[9], Eskild Petersen[10*], Corneliu Popescu[11], Michael Ramharter[12] and Patricia Schlagenhauf[13] on behalf of the European Society for Clinical Microbiology and Infectious Diseases Study Group on Clinical Parasitology

Abstract

In this position paper, the European Society for Clinical Microbiology and Infectious Diseases, Study Group on Clinical Parasitology, summarizes main issues regarding the management of imported malaria cases. Malaria is a rare diagnosis in Europe, but it is a medical emergency. A travel history is the key to suspecting malaria and is mandatory in patients with fever. There are no specific clinical signs or symptoms of malaria although fever is seen in almost all non-immune patients. Migrants from malaria endemic areas may have few symptoms. Malaria diagnostics should be performed immediately on suspicion of malaria and the gold- standard is microscopy of Giemsa-stained thick and thin blood films. A Rapid Diagnostic Test (RDT) may be used as an initial screening tool, but does not replace urgent microscopy which should be done in parallel. Delays in microscopy, however, should not lead to delayed initiation of appropriate treatment. Patients diagnosed with malaria should usually be hospitalized. If outpatient management is preferred, as is the practice in some European centres, patients must usually be followed closely (at least daily) until clinical and parasitological cure. Treatment of uncomplicated *Plasmodium falciparum* malaria is either with oral artemisinin combination therapy (ACT) or with the combination

- İV artesunat parazit yoğunluğunda hızlı azalma
- Daha düşük mortalite oranları
- Haftada 2 kez 4 hafta süreyle
  anemi ve hemoliz açısından takip

Destek Tedavisi

- Yeterli sıvı tedavisi
- Yüklenme mortalite artışı ile ilişkili
- Plazma laktat düzeyleri
- Şok ve/veya asidoz varlığında bakteriyel koinfeksiyon ??

  Kültür ve ab başlanmalı

Brunnel F, Clin Infect Dis 1997

Brunnel F, Am J Resp Care Med 2003

Sıtma + bakteriyemi

- Endemik yörelerde, özellikle falsiparum sıtmalı çocuklarda bakteriyemi oranı %12

  (Mandell,2010)

Sıtma + bakteriyemi

- 1.5 yıl sudan'da çalışıp, 20 gün önce TR'ye dönen
- 48 Y/E
- Sıtma (P. falciparum)
- Artemer/lumefantrin
  - Kan kültüründe *Serratia marcescens*
  - Aby: Ertapenem, imipenem, meropenem duyarlı
- Hasta 1g/gün ertapenem

Willke A, İnfeksiyon Dünyası, 2012

Decreasing incidence of severe malaria and community-acquired bacteraemia among hospitalized children in Muheza, north-eastern Tanzania, 2006-2010

George Mtove[1,2], Ben Amos[2,3], Behzad Nadjm[2,4], Ilse CE Hendriksen[2,5], Arjen M Dondorp[5], Abraham Mwambuli[2], Deok Ryun Kim[6], R Leon Ochiai[6], John D Clemens[6], Lorenz von Seidlein[2,7], Hugh Reyburn[2,4] and Jacqueline Deen[2,6,7*]

Abstract

Background: The annual incidence and temporal trend of severe malaria and community-acquired bacteraemia during a four-year period in Muheza, Tanzania was assessed.

Methods: Data on severely ill febrile children aged 2 months to 14 years from three prospective studies conducted at Muheza District Hospital from 2006 to 2010 was pooled and analysed. On admission, each enrolled child had a thin and thick blood film and at least one rapid diagnostic test for falciparum malaria, as well as a blood culture. The annual incidence of bacteraemia and severe malaria among children coming from Muheza was calculated and their temporal trend was assessed.

Results: Overall, 1, 898 severe falciparum malaria and 684 bacteraemia cases were included. Of these, 1, 356 (71%)

Mtove et al. Malaria Journal 2011, 10:320

2006-2010 yılları arasında;

- 2-14 yaş çocuklarda falsiparum sıtması 5 misli azalmış
- Bakteriyemi 3 misli azalmış
  - Tifo dışı salmonellozda 11 misli azalma
  - Hib ve pnömokok bakteriyemilerinde istatistiki önemde ($p:<0.001$) azalma olmuş

Mtove et al. Malaria Journal 2011, 10:320

Bacteremia in Kenyan Children Presenting with Malaria[▽]

T. Were,[1,2] G. C. Davenport,[1,3,4] J. B. Hittner,[1,5] C. Ouma,[1,6] J. M. Vulule,[7] J. M. Ong'echa,[1,3,7] and D. J. Perkins[1,3,4]*

University of New Mexico/Kenya Medical Research Institute, Laboratories of Parasitic and Viral Diseases, Centre for Global Health Research, Kisumu, Kenya[1]; Department of Pathology, School of Health Sciences, Kenyatta University, Nairobi, Kenya[2]; Center for Global Health, Department of Internal Medicine, University of New Mexico School of Medicine, Albuquerque, New Mexico[3]; Center for Infectious Diseases and Immunity, University of New Mexico Health Sciences, Albuquerque, New Mexico[4]; Department of Psychology, College of Charleston, Charleston, South Carolina[5]; Department of Biomedical Sciences and Technology, Maseno University, Kisumu, Kenya[6]; and Kenya Medical Research Institute, Centre for Global Health Research, Kisumu, Kenya[7]

Received 13 September 2010/Returned for modification 13 October 2010/Accepted 15 November 2010

Since the etiologies and clinical outcomes of bacteremia in children with *Plasmodium falciparum* infections, particularly in areas of holoendemic malaria transmission, are largely unexplored, blood cultures and comprehensive clinical, laboratory, hematological, and nutritional parameters for malaria-infected children (aged 1 to 36 months, $n = 585$ patients) were investigated at a rural hospital in western Kenya. After the exclusion of contaminant microorganisms, the prevalence of bacteremia was 11.7% in the cohort ($n = 506$), with nontyphoidal *Salmonella* spp. being the most common isolates (42.4%). Bacteremia was found to occur in a significantly higher proportion of females than males and was associated with elevated blood glucose concentrations and lowered malaria parasite and hemoglobin (Hb) levels compared to those in abacteremic participants. In addition, the incidences of respiratory distress and severe malarial anemia (SMA; Hb level of <6.0g/dl) were nonsignificantly greater in children with bacteremia. Mortality was 8.5-fold higher in children with bacteremia. Multivariate logistic regression analyses revealed that bacteremia was significantly associated with reduced incidences of high-density parasitemia (HDP; ≥10,000/μl) and increased incidences of malnutrition (i.e., underweight; weight-for-age Z score of <−2 using the NCHS system). Since previous studies showed that bacteremia caused by Gram-negative organisms is associated with enhanced anemia and mor-

J Clinic Microbiol. 2011:49:671

- Kenya’da 2004-2006 yılları arasında
- Hastanede yatan 1-36 aylık bebeklerde 585 falsiparum sıtması
- Bunların %12’sinde birlikte bakteriyemi saptanmış (kontaminantlar ayrıldıktan sonra)
- Bakteriyemik olgularda mortalite 8.5 kat fazla

Were T, et al.J Clinic Microbiol. 2011:49:671

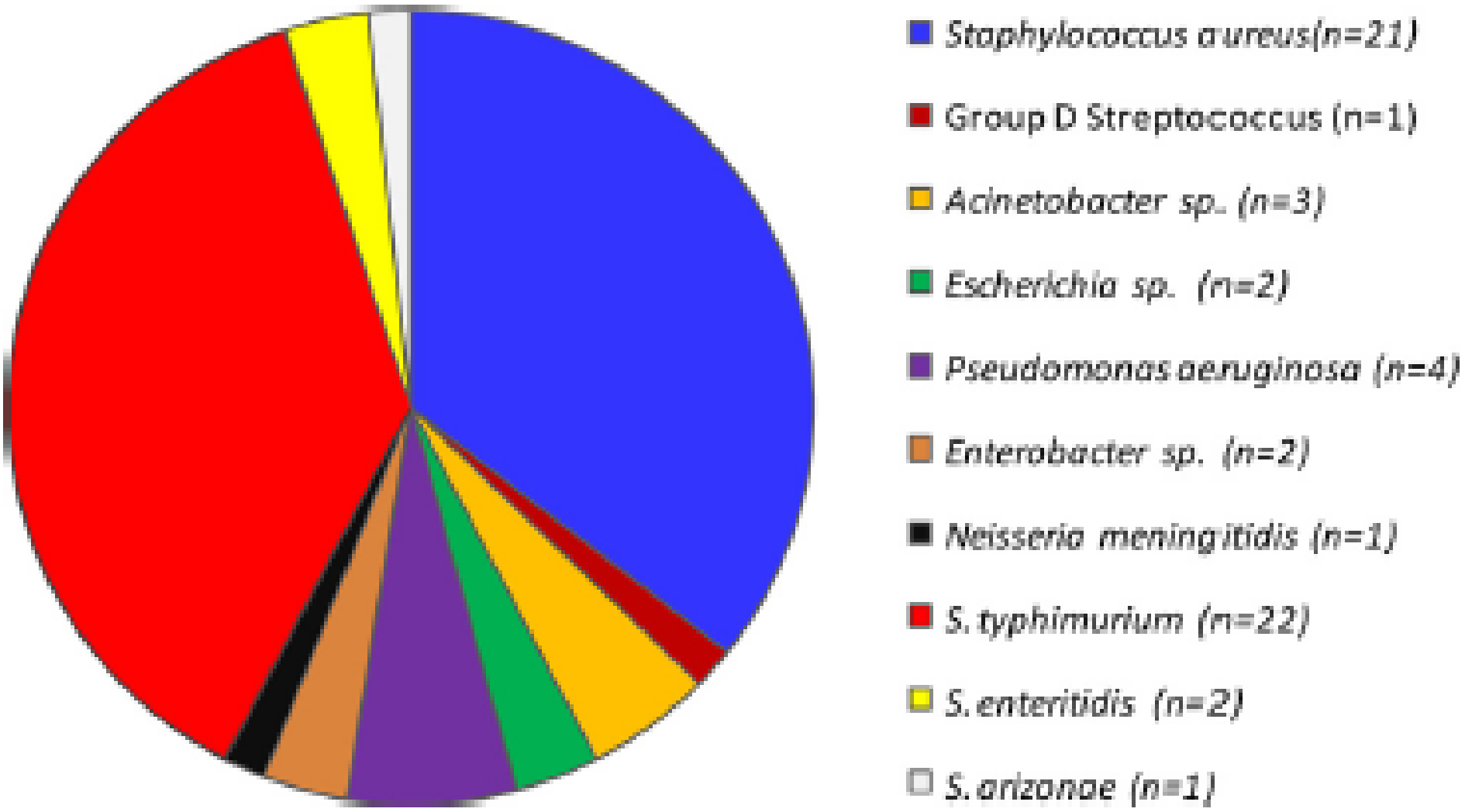


FIG. 1. Proportion of bacterial pathogens identified for children with *P. falciparum* malaria upon presentation at the hospital. Data are presented as the proportion (%) of subjects. *S. typhimurium*, *Salmo-*

Were T, et al. J Clinic Microbiol. 2011:49:671

- Kenya’da 1999-2007 yılları arasında malarya nedeniyle hastaneye yatış azalmış,
- Paralelinde invazif bakteriyel enfeksiyonlar da azalmış

(Were T et al. J Clin Microbiol 2011;49:671)

Sıtma + bakteriyemi

- Endemik yöreden dönen kişilerde falsiparum sıtması + bakteriyemi/sepsis olgu sunumları
- Az da olsa *P.vivax* + bakteriyemi olgu bildirimleri

Sonuç:

Sıtma (özellikle falsiparum sıtması) klinik tablosuyla hem bakteriyemi/sepsisle karışıyor, hem de birlikte olabiliyor

Sıtma + bakteriyemi birlikteliği

- Nedeni tam bilinmemekle birlikte;
  - Hemoliz ve demir fazlalığı
  - Makrofaj ve nötrofil fonksiyon bozukluğu
  - Parazitlere bağlı mikrovasküler harabiyet

  etken olabilir.

(Were T et al. J Clin Microbiol 2011;49:671)

Destek Tedavisi

- Akut renal yetmezlik sık, diyaliz ihtiyacı

- Hiponatremi
- Bozuk böbrek fonksiyonları
- Dilüsyonal hiponatremi
- ADH ilişkili

} Sıvı kısıtlaması

Destek Tedavisi

- Serebral malarya nöroloji YBÜ gerektirir

- Kortikosteroid veya mannitol uzamış koma kötü prognoz ile ilişkili

World Health Organization: Guidelines for the treatment of malaria, 2011

- Hipoglisemi sık, özellikle kinin tedavisi sırasında, sıkı takip gerekli

- Serebral malaryada meflokin kullanımından post malarya nörolojik sendrom nedeniyle kaçınılmalı

Destek Tedavisi

- Kan değişimi (Exchange transfusion; ET); ciddi/ağır sıtma olgularının tedavisinde kullanılması konusunda görüş birliği yok

  World Health Organization: Guidelines for the treatment of malaria, 2011

- Erythrocytopheresis; infekte eritrositleri hızla uzaklaştırarak parazitemiyi azaltabilir, randomize kontrollü çalışma yok

  Files JC, Ann Intern Med 1984

  Auer-Hackenberg L, Malar J 2012

Olgu Sunumu/Case Report Mikrobiyol Bul 2012; 46(3): 493-49

Eritrosit Değişimi Destek Tedavisi ile Başarılı Şekilde Tedavi Edilen Ciddi Falciparum Sıtması*

A Severe Falciparum Malaria Case Successfully Treated by Exchange Transfusion as an Adjunct Therapy

Yusuf Ziya DEMİROĞLU[1], İlknur KOZANOĞLU[2], Tuba TURUNÇ[1], Ebru KURŞUN[1], Hande ARSLAN[3]

P. falciparum,

Kinin/ doksisiklin

Eritrosit ET uygulanmış

Tedavi Başarısızlılıkları??

- Rekürrens??
- Reinfeksiyon??

Ayrım zor….. PCR

Tedavi başarısızlığı : Tedaviden sonraki iki hafta içinde

- Ateş ve parazitemi ile başvuran hastalarda tedavi başarısızlığı
- İlaç direnci
- İlacın vücudu zayıf geçişi veya verilmesi gereken dozun altında dozajlama,
- Hastanın kusması,
- Uygunsuz ilaç farmokinetiği …..
- İkinci- seçenek ilaçlarla tedaviye geçilmeli

Artemer- lumefantrin tedavi başarısızlığı

- Lümefantrinin zayıf biyoyararlanımı
- Yağlı gıdalarla birlikte verilmeyişine bağlanmıştır

Repetto EC, Mediter J Hematol Infect Dis, 2011

Mizuno Y, Jpn J Infect Dis, 2009

Tedavi başarısızlığı : İki haftadan sonra

- Birinci seçenek ilaçlar kullanılabilir
- Meflokin son 60 gün içinde kullanılmışsa nöropsikiyatrik komplikasyon riski nedeniyle tekrar kullanılmamalı

“En yüksekten uçan martı en uzağı görendir”

R. Bach, Martı Jonathan Levingston.

Neden önemli

- Ülkemizde geçmiş yıllara oranla sıtma olgularında belirgin azalma
- Falsiparum sıtması yurt dışı seyahat öyküsü olan ateşli hastalarda düşünülmeli
- Erken tedavi çok önemli!!!

İlginize
teşekkür ederim