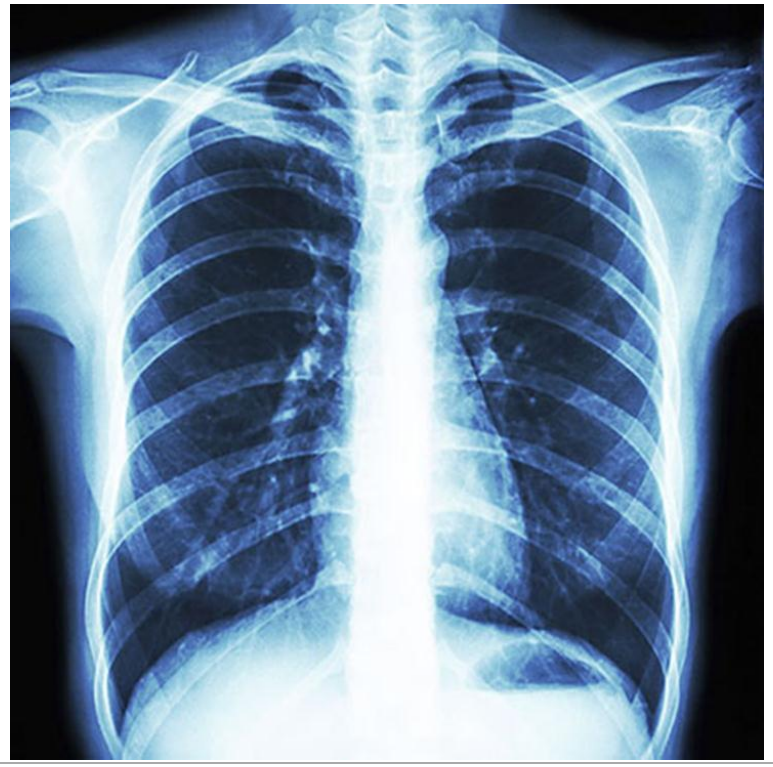
Pnömoni



DR. BORA ÇEKMEN

Giriş

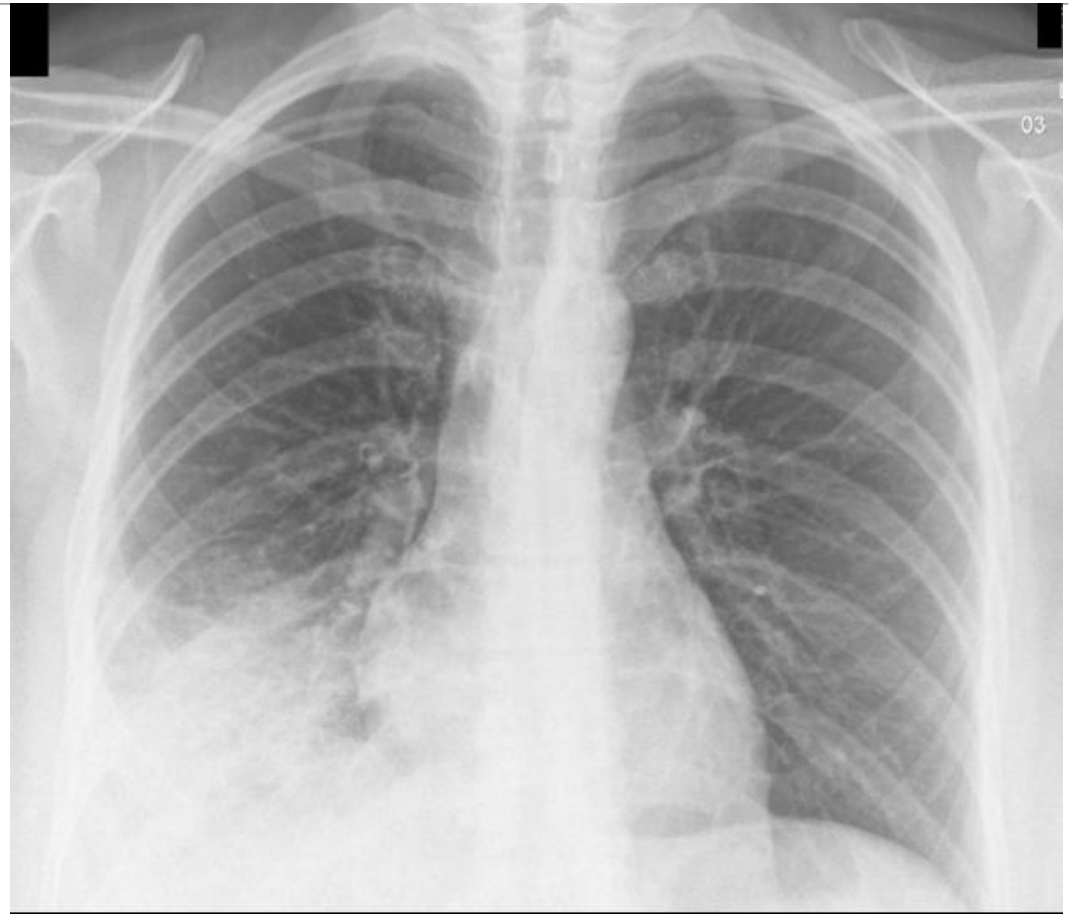
- Toplum kökenli pnömoni(TKP) epidemiyolojisi
- Antibiyotik yönetimi ve etkinliği
- Görüntüleme ve Skorlama
- Mevcut öneriler

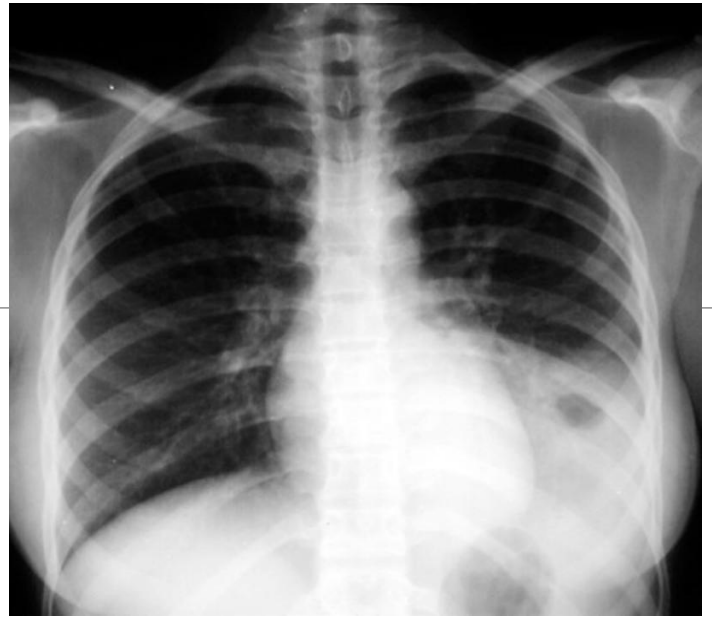
Epidemiyoloji

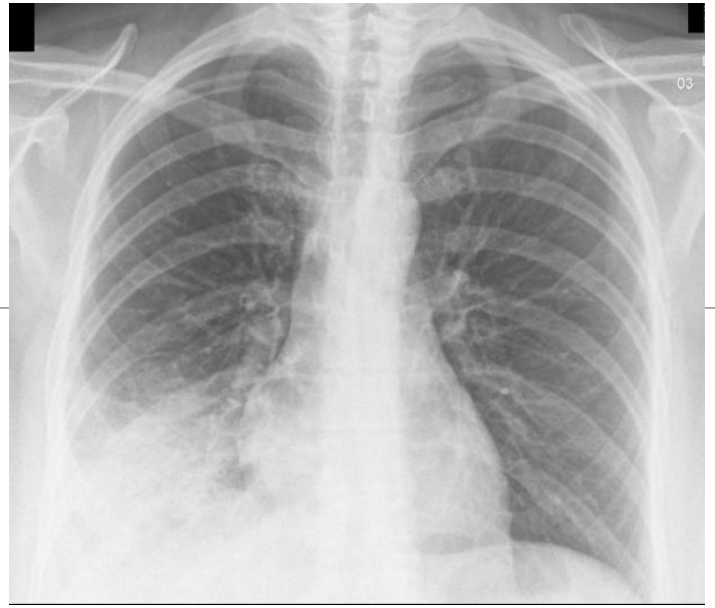
- S. pneumoniae
- H. influenza
- Atipik bakteriler
- Respiratuar virüsler

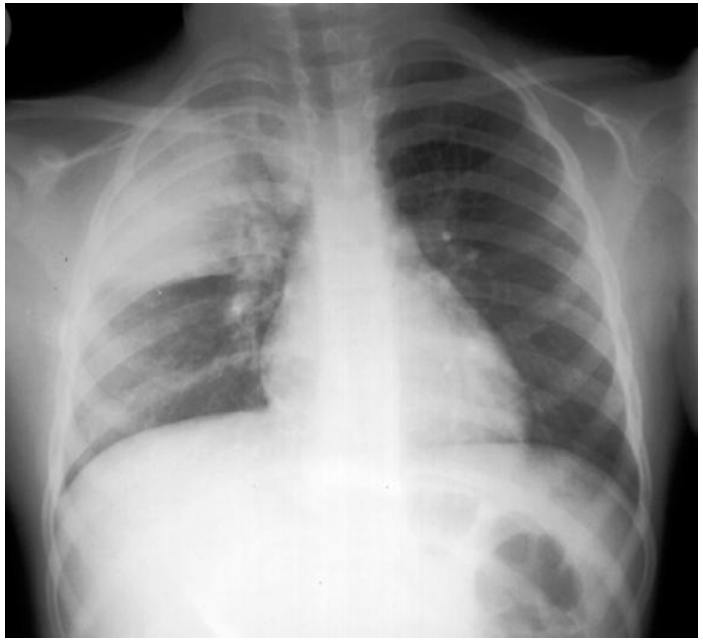
Vaka

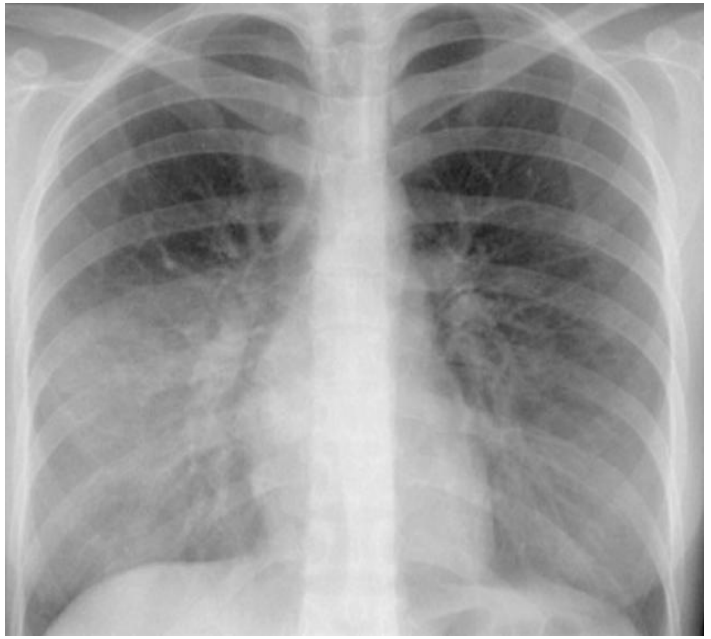
- 65 yaşında erkek hasta
- Prodüktif öksürük
- Ateş….

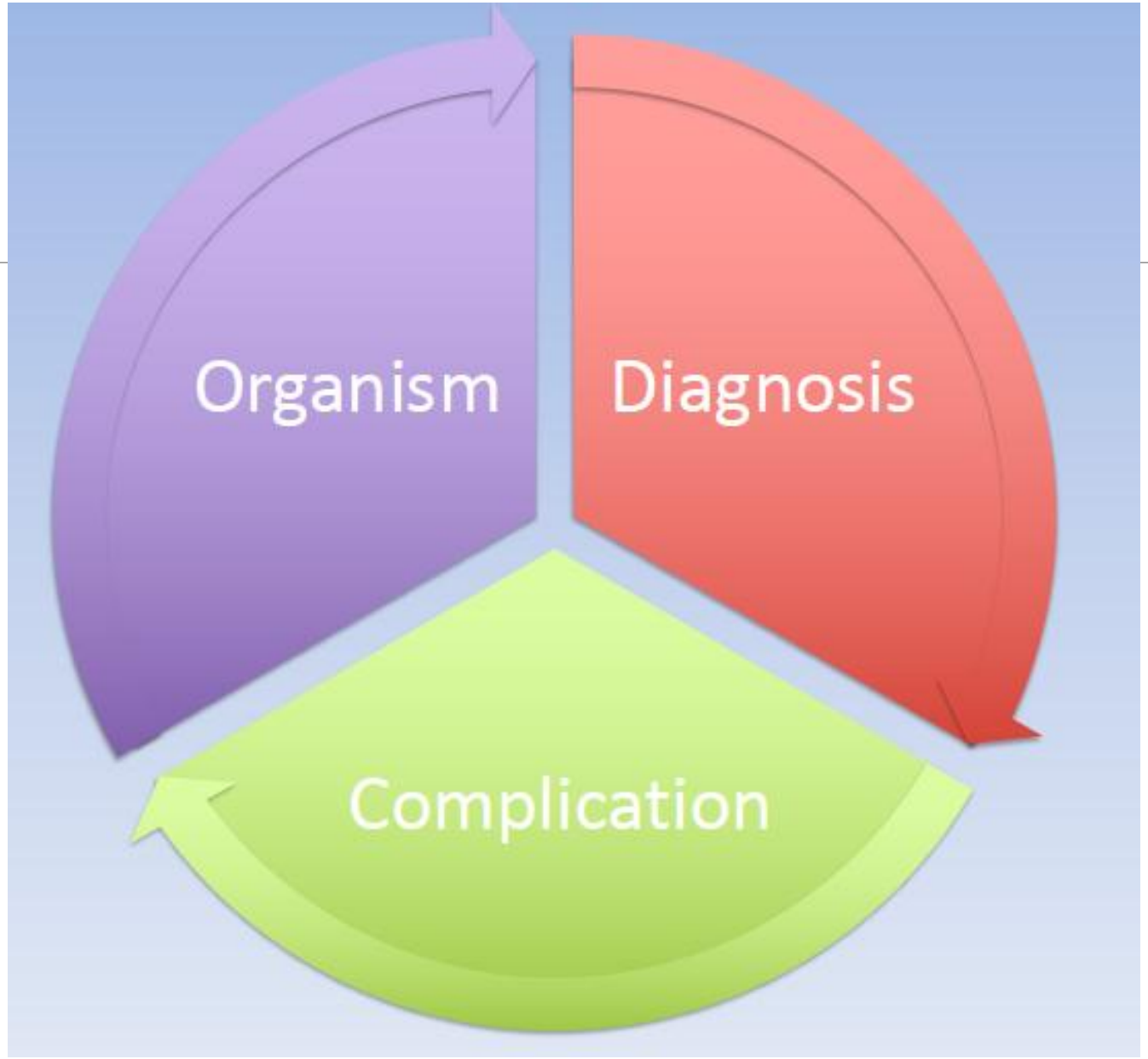











Organism
Diagnosis
Complication

Clinical Review & Education

Review

Antibiotic Therapy for Adults Hospitalized With Community-Acquired Pneumonia
A Systematic Review

Jonathan S. Lee, MD; Daniel L. Giesler, MD, PharmD; Walid F. Gellad, MD, MPH; Michael J. Fine, MD, MSc

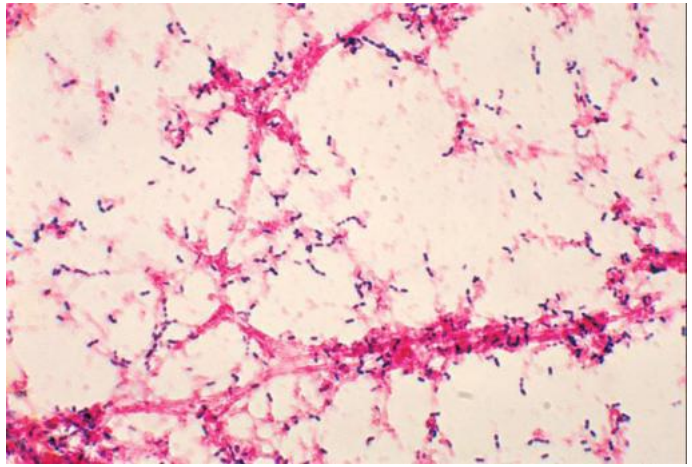
- Yıllık 674,000 AS başvurusu
- Maliyet $10.6 milyar

Streptococcus pneumonia

- Yılda 400,000 hastane yatışı
- %36'sı yetişkin pnömoni
- Ölüm oranı %5-7
- %25-30 bakteriyemi

Pneumococcal Disease

- *S. pneumoniae* first isolated by Pasteur in 1881
- Confused with other causes of pneumonia until discovery of Gram stain in 1884
- More than 80 serotypes described by 1940
- First U.S. vaccine in 1977



www.cdc.gov

İlaç Direnci Risk Faktörleri

- *S. Pneumoniae*
- ✓ *Yaş>65*
- ✓ *Son 3-6 ay içerisinde antibiyotik tedavisi*
- ✓ *İmmünsüpresyon*
- ✓ *Günlük bakım ortamında çocuklarla yoğun temas*
- *Sağlıklı insanda nasofarinks florasında %5-90*

Antibiyotik

A Call to Action for Antimicrobial Stewardship in the Emergency Department: Approaches and Strategies

Larissa May, MD, MSPH; Sara Cosgrove, MD, MS; Michelle L'Archeveque, MS; David A. Talan, MD; Perry Payne, MD, JD, MPP; Jeanne Jordan, PhD; Richard E. Rothman, MD, PhD

- Dikkatli bir antibiyotik yazma kararı, hastalar ve diğer toplum için sonuçları etkilemede önemli bir faktördür.

Annals EM 2013 July;62(1):69-77.

Antibiyotik Yan Etkileri

- Acil servis başvurularının 5 te 1
- Yan etki gelişen hastaların tahmini %5-25
- *C. diff* diyaresi

-500,000 enfeksiyon, 29,300 ölüm

Appropriate Antibiotic Use for Acute Respiratory Tract Infection in Adults: Advice for High-Value Care From the American College of Physicians and the Centers for Disease Control and Prevention

Aaron M. Harris, MD, MPH; Lauri A. Hicks, DO; and Amir Qaseem, MD, PhD, MHA, for the High Value Care Task Force of the American College of Physicians and for the Centers for Disease Control and Prevention*

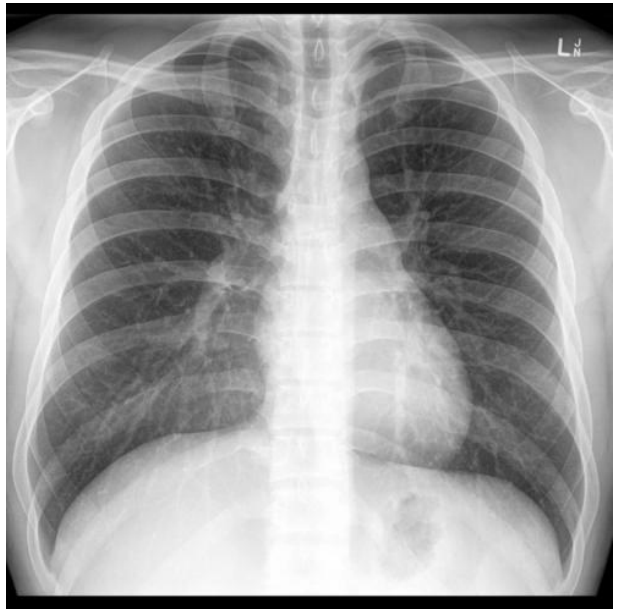
- Direnç maliyeti?

-2 milyon antibiyotik dirençli hastalık

-Yıllık 23,000 ölüm

- Ülke ekonomisine maliyeti?

-30 milyon dolar



Comparison of Clinical Prediction Models for Resistant Bacteria in Community-onset Pneumonia

Wesley H. Self, MD, MPH, Richard G. Wunderink, MD, Derek J. Williams, MD, MPH, Tyler W. Barrett, MD, MSCI, Adrienne H. Baughman, and Carlos G. Grijalva, MD, MPH

- Dirençli bakterileri belirlemeye yönelik algoritmaların retrospektif grafik analizi
- Toplumdaki direnç prevelansı %3-30

Pathogens	No HCAP criteria (n = 310)	≥1 HCAP criteria (n = 304)	All patients (N = 614)
Any pathogen detected	50 (16.1)	48 (15.8)	98 (16.0)
Any bacteria	35 (11.3)	39 (12.8)	74 (12.1)
Resistant bacteria	11 (3.5)	25 (8.2)	36 (5.9)
Methicillin-resistant *S. aureus* (MRSA)	3 (1.0)	12 (4.0)	15 (2.4)
P. aeruginosa	3 (1.0)	6 (2.0)	9 (1.5)
Acinetobacter bumannii	0	1 (0.3)	1 (0.2)
Serratia marcescens (resistant)	0	1 (0.3)	1 (0.2)
Escherichia coli (resistant)	1 (.03)	0	1 (0.2)
P. aeruginosa and MRSA	3 (1.0)	2 (0.7)	5 (0.8)
P. aeruginosa and *Stenotrophomonas maltphilia*	0	2 (0.7)	2 (0.3)
Stenotrophomonas maltphilia (resistant)	0	1 (0.3)	1 (0.2)
E. coli (resistant) and *S. pneumoniae*	1 (0.3)	0	1 (0.2)

Acad Emerg Med. 2015 Jun;22(6):730-40.

CONCISE CLINICAL REVIEW

Macrolide Antibiotics and the Risk of Cardiac Arrhythmias

Richard K. Albert[1,2] and Joseph L. Schuller[1,2]; for the COPD Clinical Research Network

[1]Denver Health, Denver, Colorado; and [2]University of Colorado Denver, Aurora, Colorado

- Uzamış QT ve QTc
- Ventriküler taşikardi/fibrilasyon
- Önce EKG?

	Male Patients		Female Patients	
	QT Interval (*ms*)	Hazard Ratio for Sudden Cardiac Death	QT Interval (*ms*)	Hazard Ratio for Sudden Cardiac Death
Normal	<430	1.0	<450	1.0
Borderline	431–450	1.3	451–470	1.8
Prolonged	>450	2.5	>470	2.6

Am J Respir Crit Care Med. 2014 May 15;189(10):1173-80.

Oral fluoroquinolone use and serious arrhythmia: bi-national cohort study

Malin Inghammar,[1] Henrik Svanström,[2] Mads Melbye,[2] Björn Pasternak,[2] Anders Hviid[2]

BMJ. 2016 Feb 26;352:i843

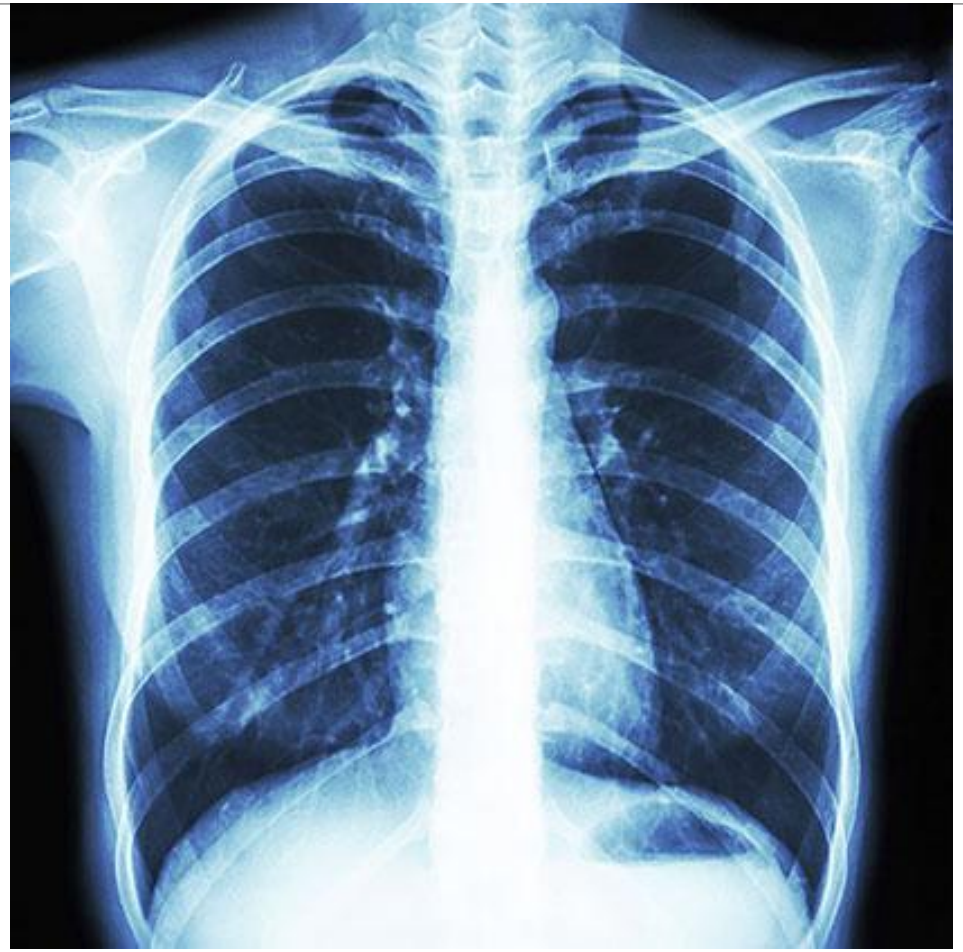
Continuing Education: Review

Weighing the Adverse Cardiac Effects of Fluoroquinolones: A Risk Perspective

J Clin Pharmacol. 2015 Nov;55(11):1198-206.

- Florokinolonlar, miyositlerde potasyum kanallarının elektrofizyolojik işlevini etkileyerek QT aralığını uzatabilir.

Görüntüleme



High discordance of chest x-ray and computed tomography for detection of pulmonary opacities in ED patients: implications for diagnosing pneumonia ☆

Wesley H. Self MD MPH [a,*], D. Mark Courtney MD MSCI [b], Candace D. McNaughton MD MPH [a], Richard G. Wunderink MD [c], Jeffrey A. Kline MD [d]

- 12 AS
- 3423 hasta
- X-ray düşük sensitivite ve PPD

Pnömoniyi tanımlamak için X-ray'ye güvenmek, önemli seviyede yanlış tanı oranlarına neden olabilir.

Am J Emerg Med. 2013 Feb;31(2):401-5.

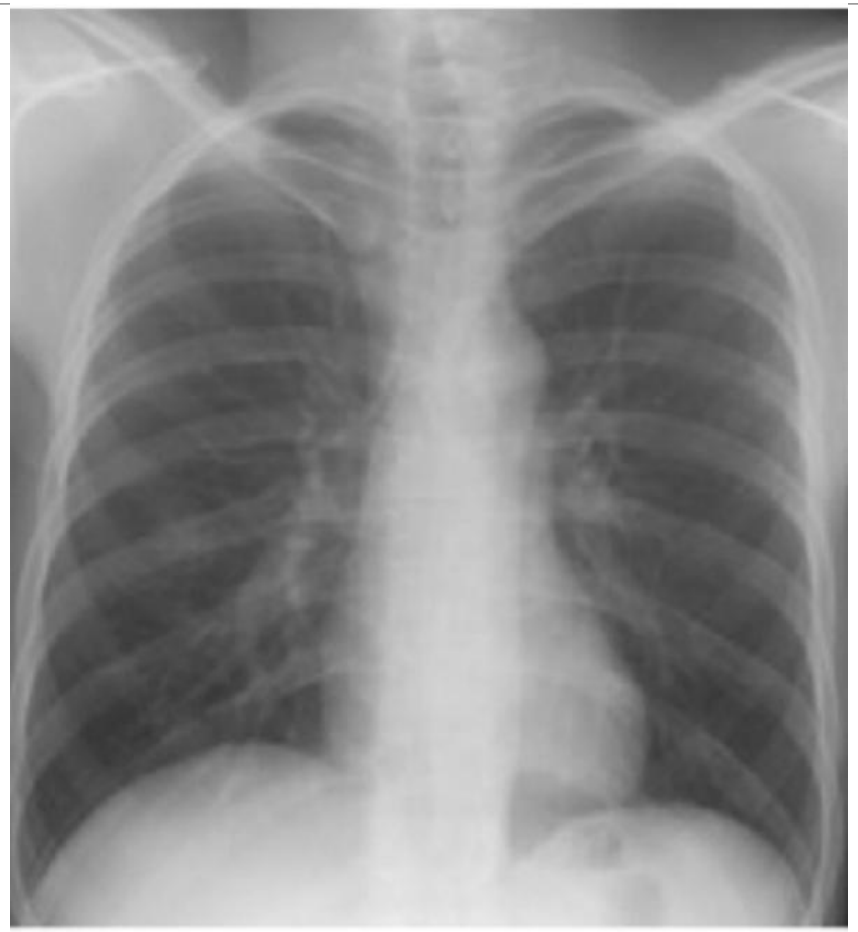
CHEST RADIOGRAPH VS. COMPUTED TOMOGRAPHY SCAN IN THE EVALUATION FOR PNEUMONIA

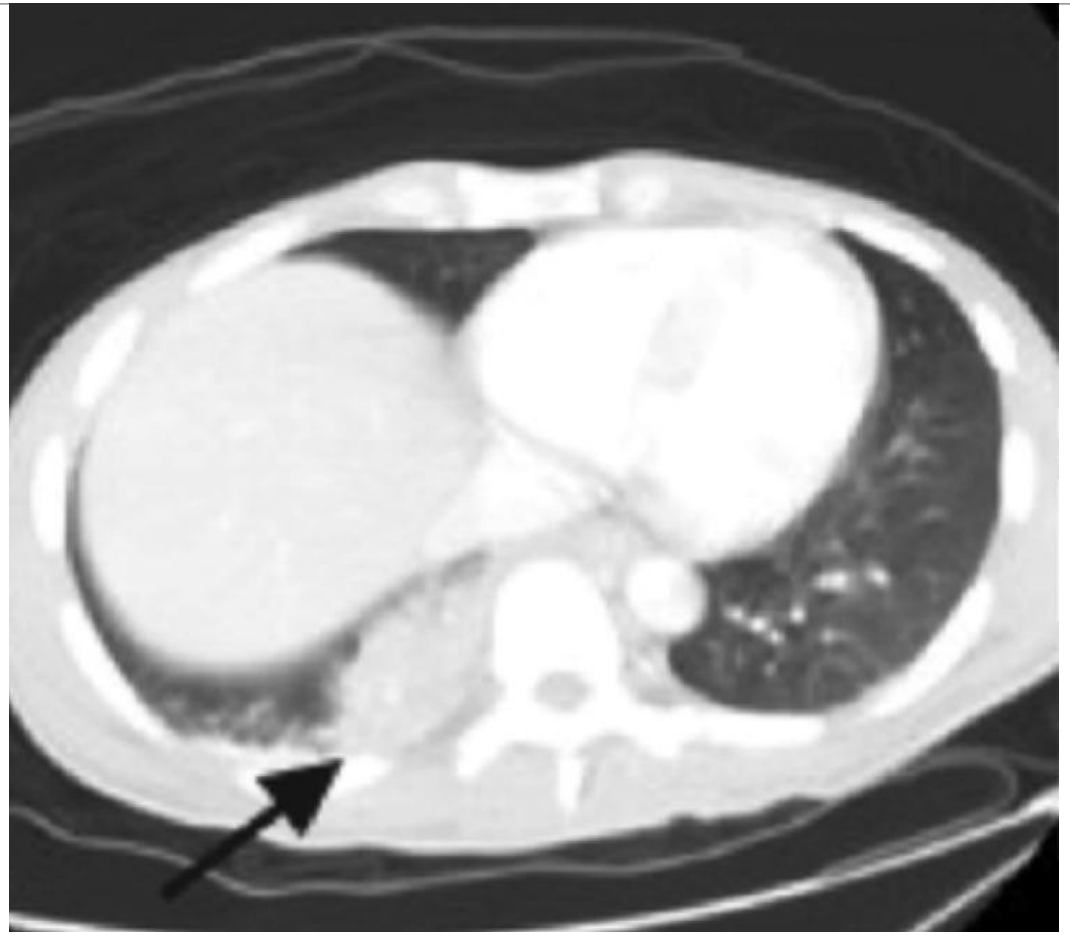
Geoffrey E. Hayden, MD and Keith W. Wrenn, MD

Department of Emergency Medicine, Vanderbilt University Medical Center, Nashville, Tennessee
Reprint Address: Geoffrey E. Hayden, MD, Department of Emergency Medicine, Vanderbilt University, 703 Oxford House, Nashville, TN 37232

- Retrospektif review
- 1057 pnömoni tanılı hasta
- Bunların %27'sinde; X-ray negatif veya diagnostik değil

J Emerg Med. 2009 Apr;36(3):266-70.





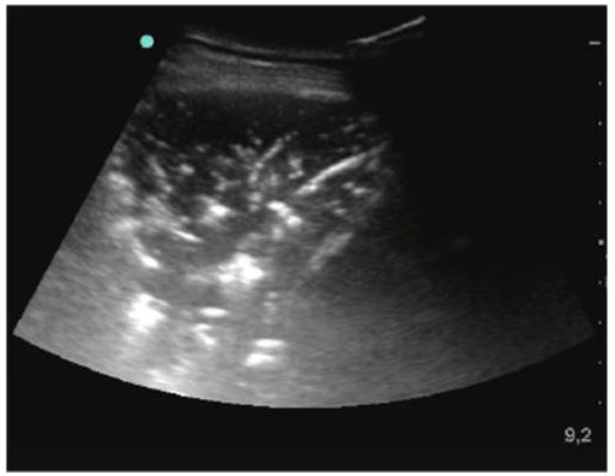
Original Contribution

Performance comparison of lung ultrasound and chest x-ray for the diagnosis of pneumonia in the ED☆

Jean-Eudes Bourcier, MD [a,*], Julie Paquet, MD [a], Mickael Seinger, MD [a], Emeric Gallard, MD [a], Jean-Philippe Redonnet, MD [a], Fouad Cheddadi, MD [a], Didier Garnier, MD [a], Jean-Marie Bourgeois, MD, PhD [b], Thomas Geeraerts, MD, PhD [c]

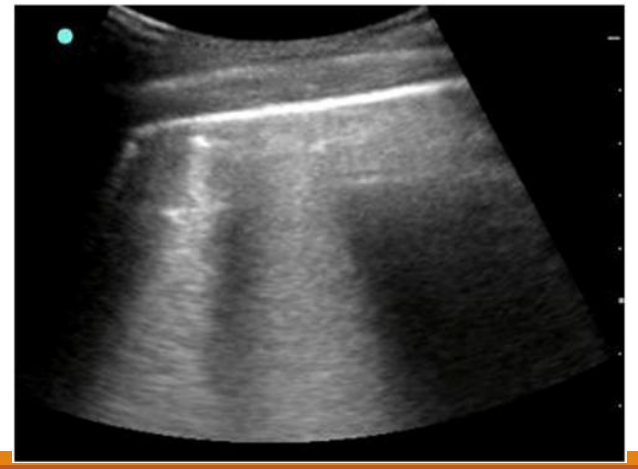
Respective performance of lung ultrasonography and chest x-ray for the diagnosis of acute pneumonia according to the delay from the onset of clinical signs

	Positive sonography	Positive chest x-ray	*P*
Signs <24 h, n = 44	43 (76%)	13 (23%)	< .001
Signs >24 h, n = 79	74 (93%)	61 (77%)	.003



Respective performance of lung ultrasound, chest x-ray in the diagnosis of acute pneumonia according to the CT scan diagnosis

Pneumonia on thoracic CT scan	Positive sonography	Positive chest x-ray	*P*
N = 23	23	12	< .01



Am J Emerg Med. 2014 Feb;32(2):115-8

Risk

INFECTIOUS DISEASE/ORIGINAL RESEARCH

Hospital Admission Decision for Patients With Community-Acquired Pneumonia: Variability Among Physicians in an Emergency Department

Nathan C. Dean, MD, Jason P. Jones, PhD, Dominik Aronsky, MD, PhD, Samuel Brown, MD, MS, Caroline G. Vines, MD, Barbara E. Jones, MD, Todd Allen, MD

- Yatış oranı %58
- %38-79 arası değişken
- Ciddiyetin objektif hesaplanması %2,7

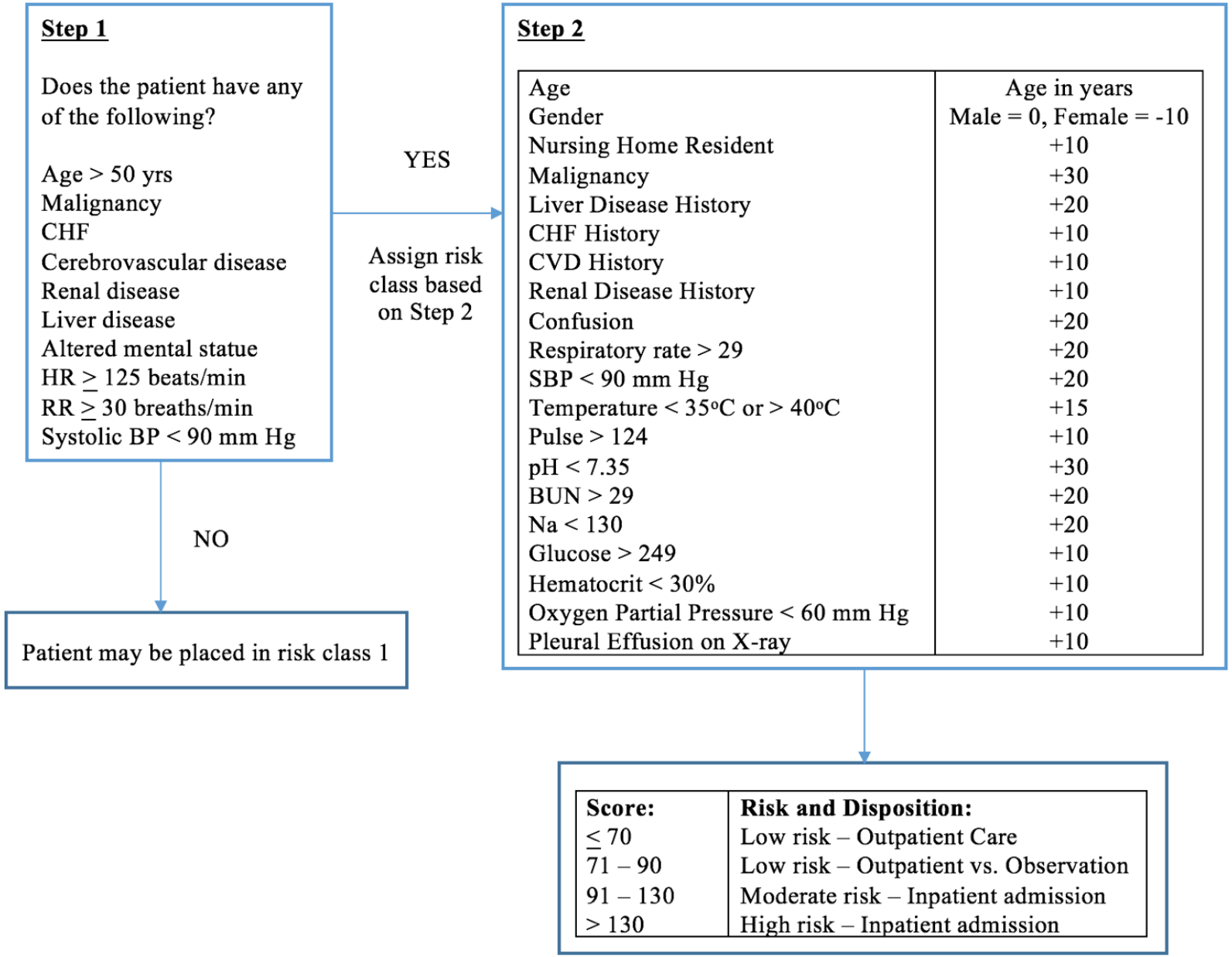
Ann Emerg Med. 2012 Jan;59(1):35-41.

Clinical factor	Points
Confusion	1
Blood urea nitrogen > 19 mg per dL	1
Respiratory rate ≥ 30 breaths per minute	1
Systolic blood pressure < 90 mm Hg or Diastolic blood pressure ≤ 60 mm Hg	1
Age ≥ 65 years	1
Total points:	

CURB-65 score	Deaths/total (%)*	Recommendation†
0	7/1,223 (0.6)	Low risk; consider home treatment
1	31/1,142 (2.7)	
2	69/1,019 (6.8)	Short inpatient hospitalization or closely supervised outpatient treatment
3	79/563 (14.0)	Severe pneumonia; hospitalize and consider admitting to intensive care
4 or 5	44/158 (27.8)	

CRB-65 score‡	Deaths/total (%)*	Recommendation†
0	2/212 (0.9)	Very low risk of death; usually does not require hospitalization
1	18/344 (5.2)	Increased risk of death; consider hospitalization
2	30/251 (12.0)	
3 or 4	39/125 (31.2)	High risk of death; urgent hospitalization

pneumonia severity index



Drahomir Aujesky, and Michael J. Fine Clin Infect Dis. 2008;47:S133-S139

Mevcut Öneriler

Birinci Tercih Tedavi; Yetişkin TKP

- Monoterapi: Solunum yolu Florokinolonları (Moksi-Gemi-Levofloksasin)

  Kombine: β-Laktam (Sefotaksim, Seftriakson veya

  Ampisilin) ve Macrolid (Azitromisin,

  Klaritromisin veya Eritromisin) kombinasyonu

Birinci Tercih Tedavi; Pediyatrik TKP

- Ayaktan: β-laktam

-Oral Amoksisilin ± Klavulonat

-Atipikte Makrolid ekle

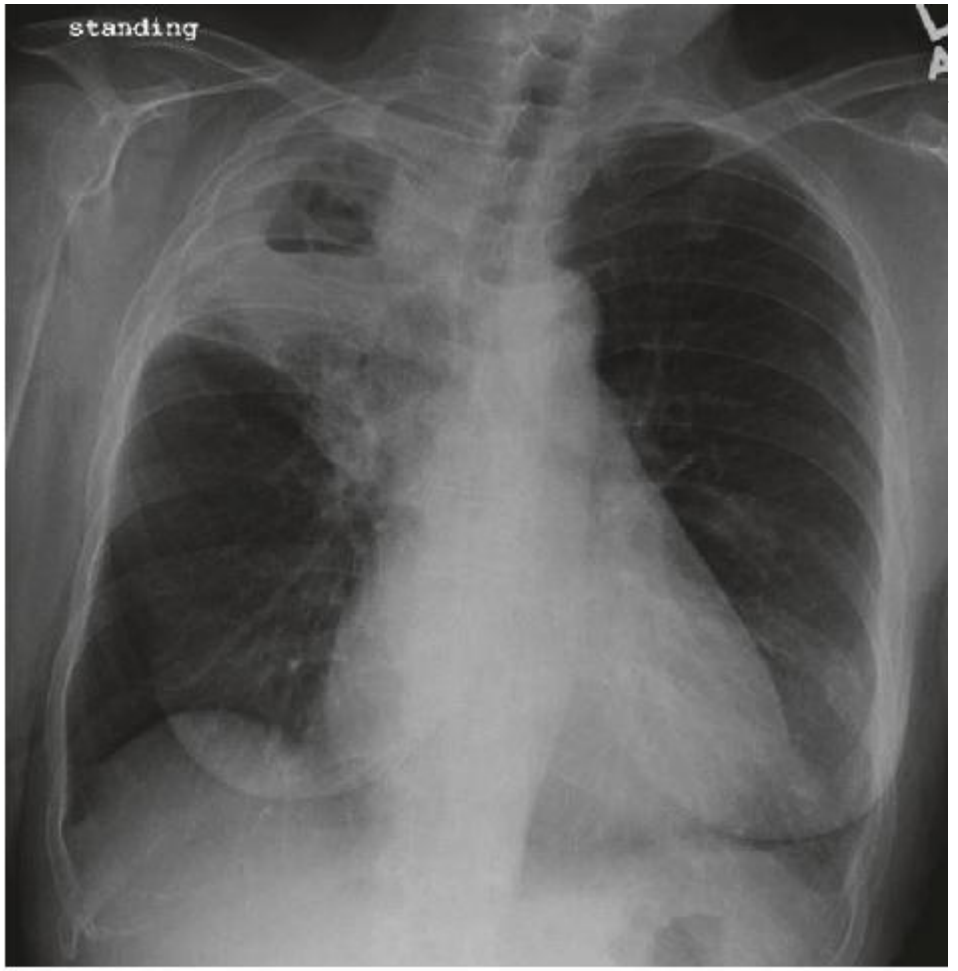
- Yatan: β-laktam

- Atipikte Makrolid ekle

- MRSA şüphesi varsa Vankomisin/Klindamisin ekle

!!.....HKP

- *Pseudomonas aeruginosa*
  - Piperasilin-tazobaktam
  - Sefepim, Seftazidim
  - İmipenem/Meropenem



HKP Risk Faktörleri

- 90 gün içinde hastane yatışı
- Bakım evi
- 30 gün içinde IV antibiyotik, kemoterapi
- Diyaliz

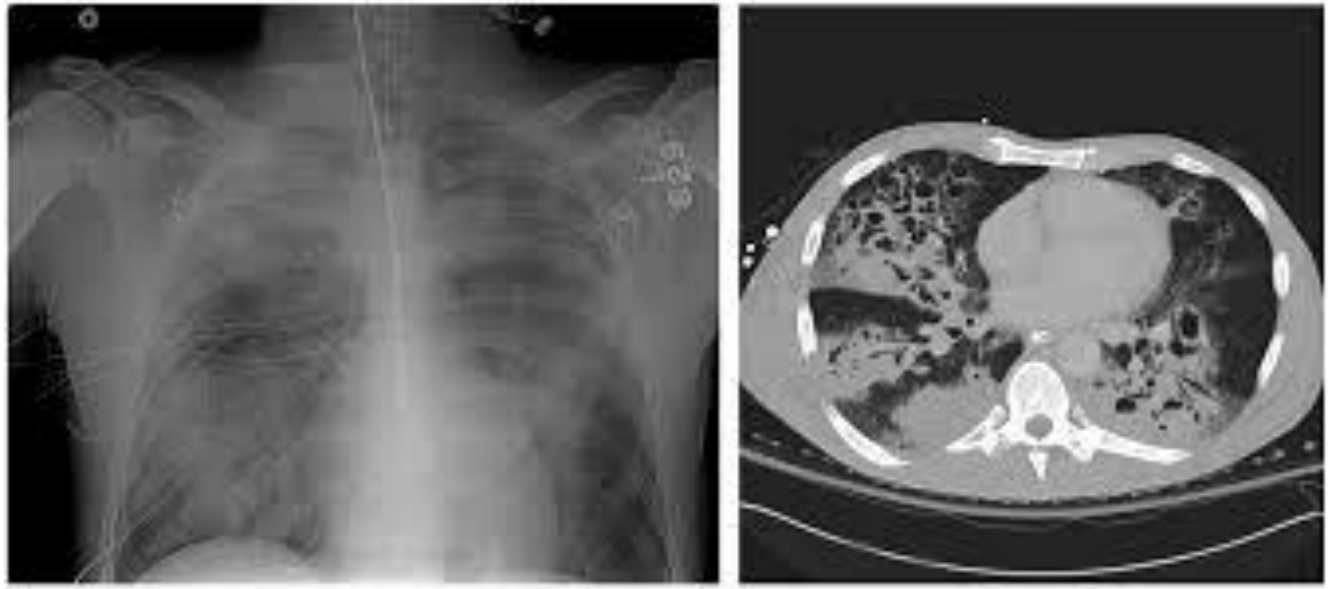
Clin Infect Dis. 2008 Apr 15;46

Risk factors for methicillin-resistant *Staphylococcus aureus* in patients with community-onset and hospital-onset pneumonia

- Geçmiş antibiyotik öyküsü
- Sigara, Tütün
- Uyuşturucu kullanımı

MRSA varlığında

-Vankomisin, Linezolid



Eve Dönerken;)

- Erken antibiyotik
- İlk Tercih:
  - β-Laktam + Makrolid
  - Florokinolonlar
- Geniş spektrum
- Yüksek riskli hastaları belirle
- Skorlama sistemleri kullan