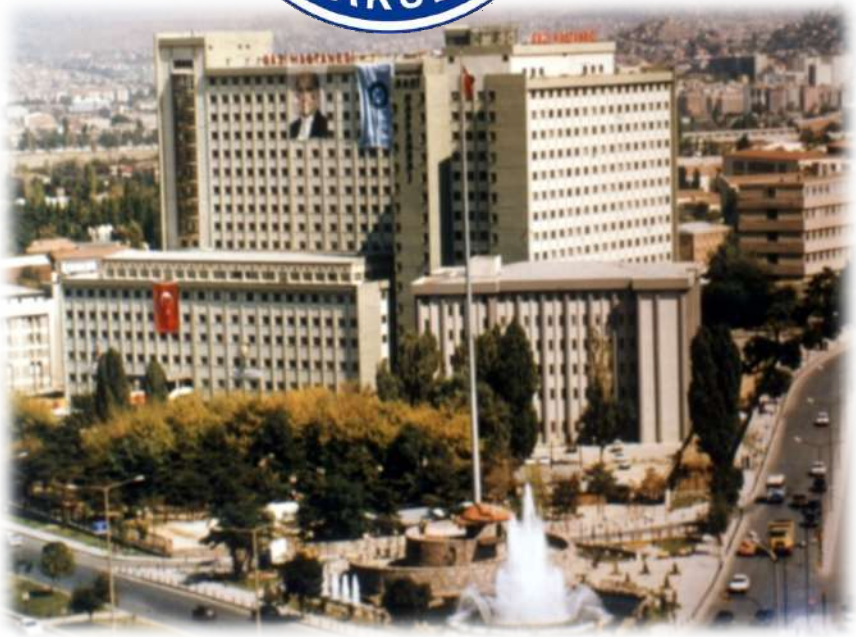
RİSK GRUPLARINDA PNÖMOKOK AŞILAMASI

Prof. Dr. Esin Şenol



ERİŞKİN AŞILAMA PROGRAMLARI

- YAŞ
- YAŞAM TARZI
- MESLEK
- DAHA ÖNCEKİ AŞILANMA /İMMUNİTE DURUMU
- ÖZEL RİSK DURUMU
- SEYAHAT
- TEMAS SONRASI

ÖZEL KONAK KİM ?

- **Hematopoetik Kök Hücre Nakil (HKHN)alıcıları**
- **Kanser hastalar**
- **İMMUNSUPRESİF TEDAVİ** alan hastalar (TNF-inhibitörleri , steroid gibi)
- **HIV infeksiyonlu** hastalar
- **Kronik hastalıklar**
  - ✓ Diyabetik hastalar
  - ✓ Kronik karaciğer
  - ✓ Kronik akciğer hastalığı
  - ✓ Kalp hastalığı
  - ✓ Kronik böbrek yetmezliği olan hastalar
- **Asplenik hastalar**
- **Gebeler**
- **Sağlık personeli**

Kronik Hastalıklar

- **Astım dahil kronik akciğer hastalığı**
- **Diyabet dahil metabolik hastalıklar**
- **Kronik kalp hastalığı (hipertansiyon hariç)**
- **Kronik karaciğer hastalığı**
- **Kronik böbrek hastalığı, nefrotik sendrom**
- **Kronik nörolojik hastalıklar**
- Sigara
- Alkolizm
- Obesite

Türkiye – Özet Veriler

PREVALANS / HASTA SAYILARI					
		Diyabet	**KOAH**	**KKY**	**Astım**
	Prevalans	13,7%	19,1%	3,2%	8,1%

Yaş	**Popülasyon**	**Hasta Sayıları**			
50 +	16.440.131	2.252.298	3.140.065	526.084	1.323.431
65 +	5.891.694	807.162	1.125.314	188.534	474.281

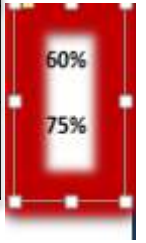


Table 2 Recommended Adult Immunization Schedule by Medical Condition and Other Indications, United States, 2021

Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 count		Asplenia, complement deficiencies	End-stage renal disease; or on hemodialysis	Heart or lung disease, alcoholism[1]	Chronic liver disease	Diabetes	Health care personnel[2]	Men who have sex with men
			<200 mm³	≥200 mm³							
IIV or RIV4	1 dose annually										
or										or	
LAIV4	Not Recommended						Precaution			1 dose annually	
Tdap or Td	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	Not Recommended*	Not Recommended	1 or 2 doses depending on indication								
VAR	Not Recommended*	Not Recommended			2 doses						
RZV		2 doses at age ≥50 years									
HPV	Not Recommended*	3 doses through age 26 years	2 or 3 doses through age 26 years depending on age at initial vaccination or condition								
PCV13	1 dose										
PPSV23	1, 2, or 3 doses depending on age and indication										
HepA	2 or 3 doses depending on vaccine										
HepB	2, 3, or 4 doses depending on vaccine or condition								<60 years		
									≥60 years		
MenACWY	1 or 2 doses depending on indication, see notes for booster recommendations										
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations									
Hib		3 doses HSCT[3] recipients only			1 dose						

- Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection
- Recommended vaccination for adults with an additional risk factor or another indication
- Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction
- Recommended vaccination based on shared clinical decision-making
- Not recommended/ contraindicated—vaccine should not be administered.
- No recommendation/ Not applicable

*Vaccinate after pregnancy.

ACIP 2022 Güncellemesi

Figure–Continued.

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2022

Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 percentage and count: <15% or <200 mm³	HIV infection CD4 percentage and count: ≥15% and ≥200 mm³	Asplenia, complement deficiencies	End-stage renal disease, or on hemodialysis	Heart or lung disease; alcoholism[1]	Chronic liver disease	Diabetes	Health care personnel[2]	Men who have sex with men
IIV4 or RIV4	1 dose annually										
or										or	
LAIV4	Contraindicated					Precaution				1 dose annually	
Tdap or Td	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	Contraindicated*	Contraindicated	1 or 2 doses depending on indication								
VAR	Contraindicated*	Contraindicated	2 doses								
RZV	2 doses at age ≥19 years	2 doses at age ≥50 years									
HPV	Not Recommended*	3 doses through age 26 years	2 or 3 doses through age 26 years depending on age at initial vaccination or condition								
Pneumococcal (PCV15, PCV20, PPSV23)	1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)										
HepA	2 or 3 doses depending on vaccine										
HepB	3 doses (see notes)	2, 3, or 4 doses depending on vaccine or condition									
MenACWY	1 or 2 doses depending on indication, see notes for booster recommendations										
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations									
Hib	3 doses HSCT[3] recipients only	1 dose									

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision-making

Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction

Contraindicated or not recommended—vaccine should not be administered.

*Vaccinate after pregnancy.

No recommendation/ Not applicable

1. Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Morbidity and Mortality Weekly Report, January 28, 2022 Weekly / Vol. 71 / No. 4

ACIP 2022 Pnömokok Aşılaması

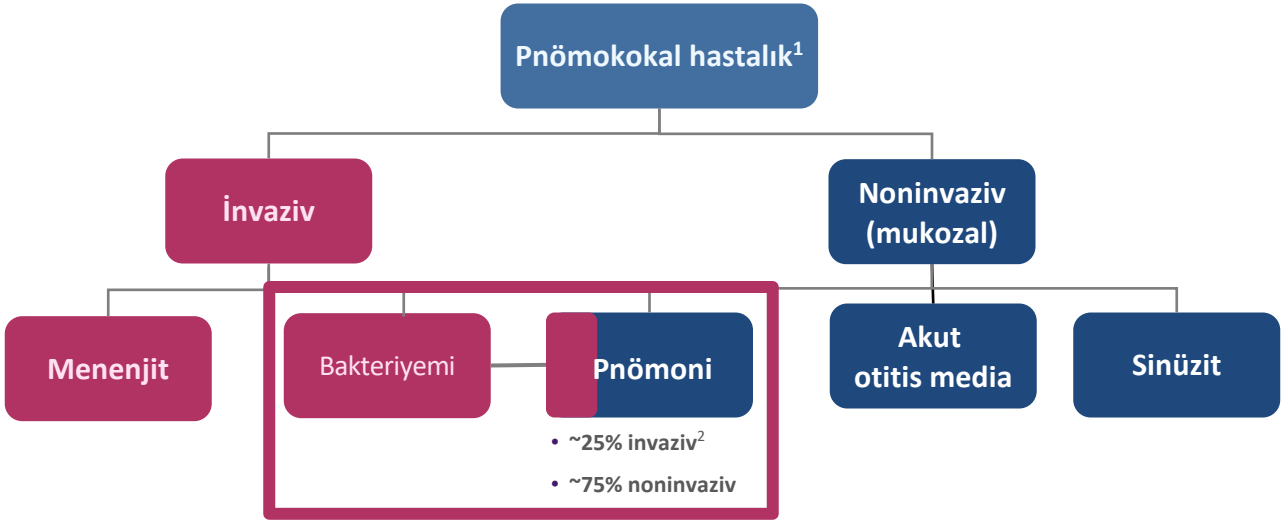
Tüm risk gruplarında (yaştan bağımsız) tek doz PCV20 ya da PCV15 +PPSV23 önerilmiştir.

	19-64 yaş arası	≥65 yaş
Kronik Hastalığı Olanlar* (Astım, KOAH,diyabet vb.)	**PCV20 tek doz veya PCV15 +PPS23**	**PCV20 tek doz veya PCV15 +PPS23**
Kohlear implant, BOS kaçağı, immun sistemi zayıflamış kişiler**		

** en az 8 hafta ara ile yapılabilir.

Morbidity and Mortality Weekly Report, January 28, 2022 Weekly / Vol. 71 / No. 4

Pnömokokal hastalık, invaziv ve noninvaziv (mukozal) hastalık olarak iki gruba ayrılabilir.



- Noninvaziv formlar, invazive dönüşebilir. (bakteriyeminin eşlik ettiği pnömoni)[1]
- Hastalığın şiddeti ve invazivliği, serotipe göre değişir.[3]

1. World Health Organization (WHO). Pneumococcal vaccines. WHO position paper—2012. *Wkly Epidemiol Rec*. 2012;87(14)129-144.
2. Said MA et al. Estimating the burden of pneumococcal pneumonia among adults: a systematic review and meta-analysis of diagnostic techniques. *PLoS One*. 2013;8:e60273.
3. Jansen AG et al. IPD among adults: associations among serotypes, disease characteristics, and outcome. *Clin Infect Dis*. 2009;49(2):e23-29.

Türkiye'de de TGP'nin en sık etkeni *S. pneumoniae*'dır.

Turk Thorac J 2021; 22(4): 339-345 DOI: 10.5152/TurkThoracJ.2021.20223

Original Article

The Role of Pneumococcal Pneumonia among Community-Acquired Pneumonia in Adult Turkish Population: TurkCAP Study

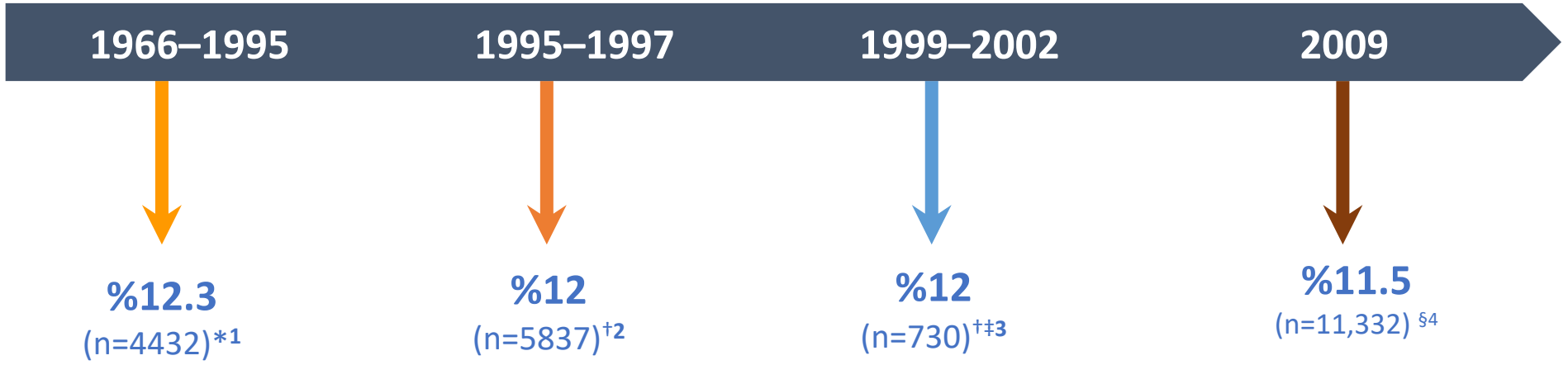
Esin Şenol[1], Aykut Çilli[2], Hakan Günen[3], Alper Sener[4], Rıdvan Dumlu[4], Ayşe Ödemiş[2], Ayşe Füsun Topçu[5], Yeşim Yıldız[6], Rahmet Güner[7], Ayhan Özhasenekler[8], Birsen Mutlu[9], Nurdan Köktürk[10], Nurgül Sevimli[10], Nurcan Baykam[11], Derya Yapar[11], Selami Ekin[12], Mehmet Polatlı[13], Şebnem Eren Gök[14], Oğuz Kılınç[15], Abdullah Sayıner[16], Ömer Karaşahin[17], Çağlar Çuhadaroğlu[18], Ayşe Sesin Kocagöz[19], Turhan Togan[20], Hüseyin Arpağ[21], Hakan Katı[1], İftihar Köksal[22], Firdevs Aksoy[22], Canan Hasanoğlu[23]

Ülke genelinden 22 merkezin katıldığı prospektif gözlemsel bir çalışma olan TurkCAP Çalışması'nda erişkin **TGP'lerin %22.8'inin pnömokok kaynaklı** olduğu saptanmıştır.

1. Senol E. et al., The Role of Pneumococcal Pneumonia among Community-Acquired Pneumonia in Adult Turkish Population: TurkCAP Study. Turk Thorac J 2021; 22: 339-345

Pnömokokal pnömonili hastaların mortalitesi önemli düzeyde değişmemektedir.

Pnömokokal pnömonili hastaların mortalitesi önemli düzeyde değişmemektedir.



***Farklı çalışma koşullarında ve farklı ülkelerde karma hasta popülasyonu. Veriler, 122 makalenin literatür taramasına dayanmaktadır.**

†ABD. ‡Yoğun bakım ünitesi ve serviste 90 günlük mortalite. §Danimarka, ilk hastaneye yatış sırasında.

1. Fine MJ, et al. JAMA. 1996;275:134-141. 2. Feikin DR, et al. Am J Pub Health. 2000;90:223-229. 3. Restrepo MI, et al. Chest. 2008;133:610-617.4. Klausen HH et al. Respir Med. 2012;106:1778-87.

PNÖMOKOKAL HASTALIKLARIN YÜKÜ

- MORTAL
  - PP (%5-7->%40), Bakteremi (%20-60)
  - USA-40.000 ölüm/yıl
  - **Türkiye'de mortalite: %10,3 – %60,0**
- AÖH ARASINDA 2.SIKLIKTAKİ ÖLÜM NEDENİ
- Influenza mevsim ve pandemiler; pnömonilerin %50'sinden ve neredeyse tüm ölümler ve komplikasyonlardan sorumlu
- **Risk grupları ve yaşlılarda insidans yüksek, mortalite 2-8 kat..**

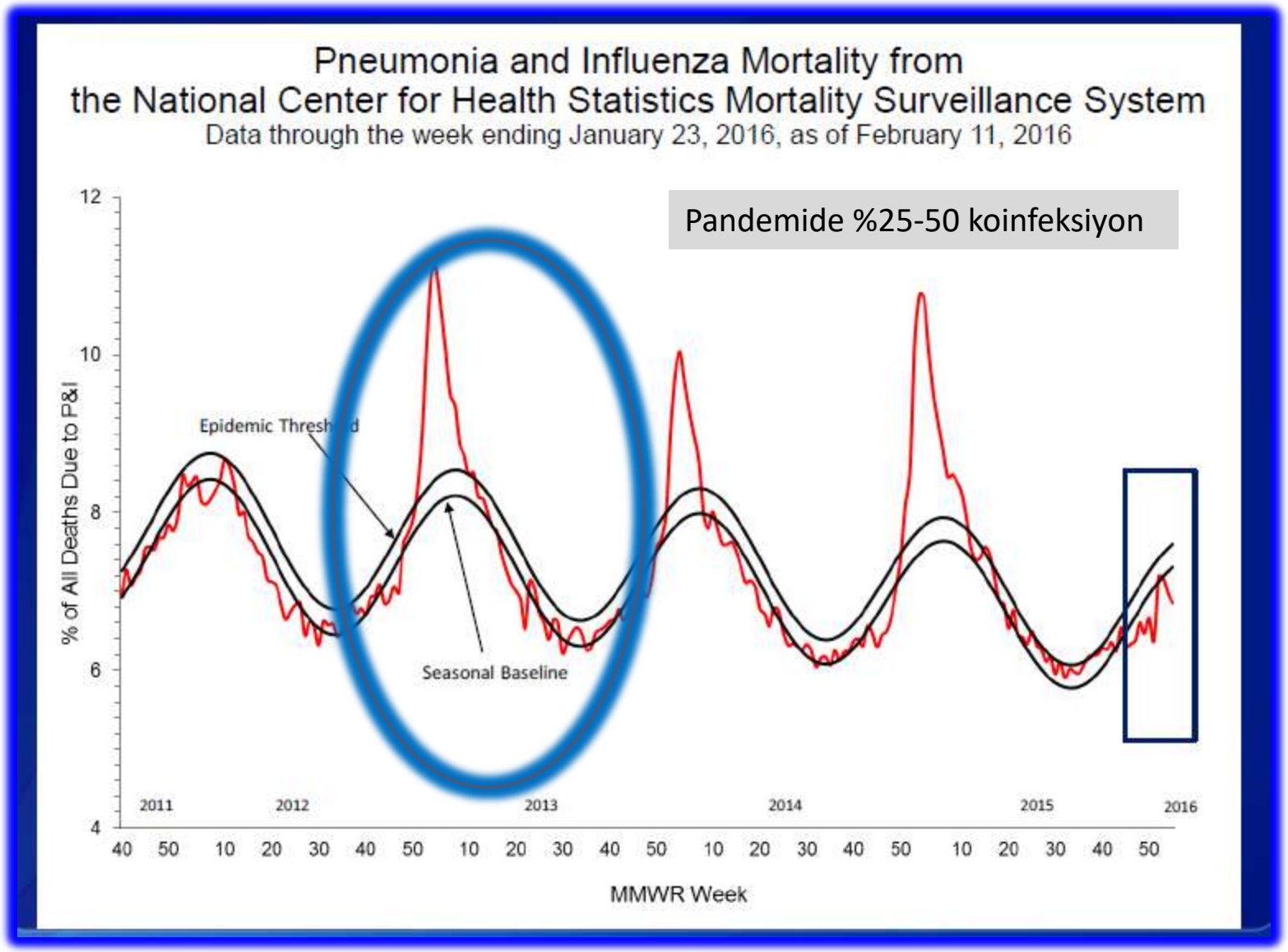
Lynch JP,Zhanel GG.Semin Resp Crit Care Med 2009:30:189-209 2.Brundage JF.Lancet Infect Dis 2006:6:303-12 3.Ludwig E.Eur Respir Rev.212:21:123:57-65 4.Türk Toraks Derneği, Pnömoni Tedavi Uzlaşı Raporu, 2009, Cilt 10, Ek 9,5.TC Sağlık Bakanlığı, Refik Saydam Hıfzıssıhha Merkezi Başkanlığı Hıfzıssıhha MektebiMüdürlüğü ve Başkent Üniversitesi, Ulusal Hastalık Yükü ve Maliyet Etkinlik Projesi sonuçları, Aralık 2004

PNÖMOKOKAL HASTALIKLARIN YÜKÜ

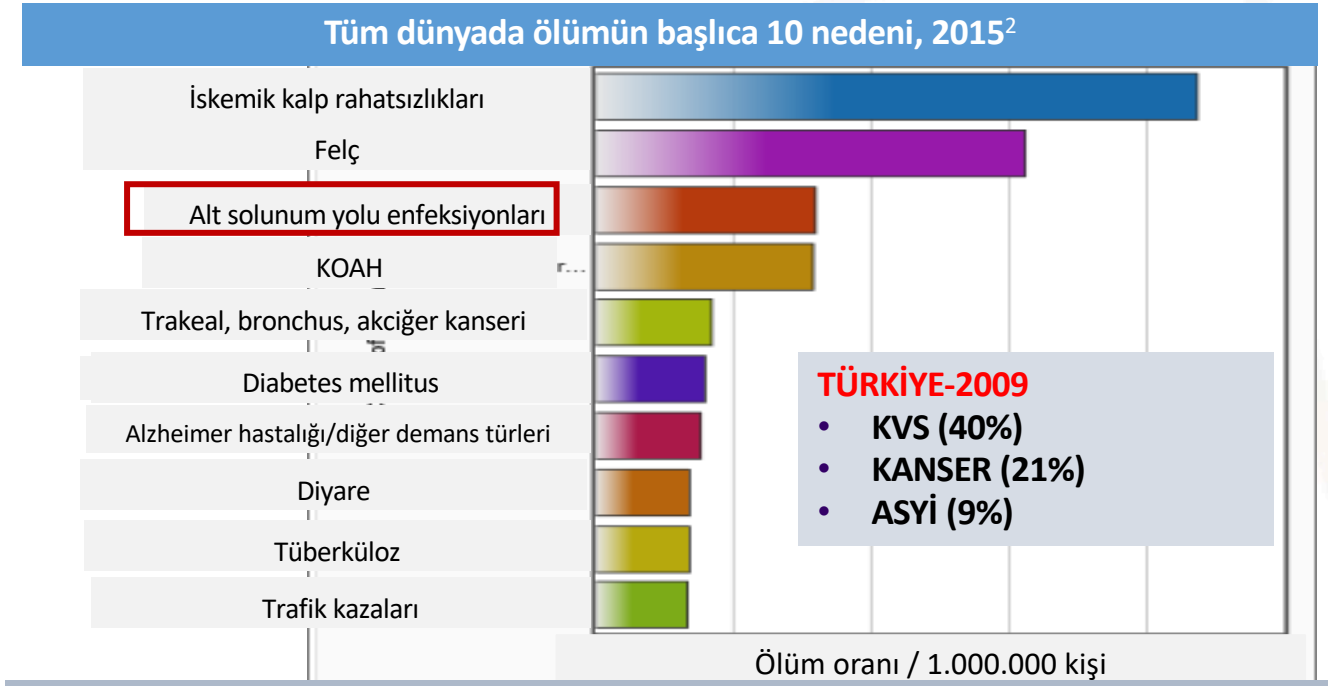
- **TKP: PNÖMONİDEN- 3–4 milyon ölüm**
- **Avrupa-Erişkin Enfeksiyon Kaynaklı Ölüm 1. sırada**
- **Solunum sistemi hastalıklarına bağlı hastane günlerinin >%30 –işgücü kaybı - 3.5 milyar € -AVRUPA, 10.1 milyar €**
- **US > 50 y, 3.7 milyar $ total direk ve 1.8 milyar $ total indirek maliyet**

1. *Weycker D et al. Vaccine 2010;28:4955–60.*
2. *European Respiratory Society/European Lung Foundation. Pneumonia In: European Lung White Book. 2nd Edition: European Respiratory Society/European Lung Foundation, 2003*

3. Corrales-Medina V,Lancet 2013:381:496-505


Pneumonia and Influenza Mortality from
the National Center for Health Statistics Mortality Surveillance System
Data through the week ending January 23, 2016, as of February 11, 2016
Pandemide %25-50 koinfeksiyon
% of All Deaths Due to P&I
12
10
8
6
4
Epidemic Threshold
Seasonal Baseline
2011
2012
2013
2014
2015
2016
40 50 10 20 30 40 50 10 20 30 40 50 10 20 30 40 50 10 20 30 40 50
MMWR Week

Pnömoni dahil alt solunum yolu enfeksiyonları, tüm dünyada ölümün başlıca nedenidir.[1]



Alt solunum yolu enfeksiyonları en ölümcül bulaşıcı hastalık olarak kaldı ve 2015'te dünya genelinde 3.2 milyon ölüme neden oldu.

KOAH, kronik obstrüktif akciğer hastalığı

1. Naghavi M, et al. Lancet. 2015;385:117–71. 2. http://www.who.int/mediacentre/factsheets/fs310/en/. Accessed on 14.05.2017

COVID19 pandemisi öncesinde de pnömoni, Türkiye'de de en önemli ölüm nedenlerinden biridir.[1]

- **Tüm ölüm nedenleri arasında 4. sırada.**
- **KOAH'tan ve akciğer kanserinden daha fazla ölüme neden oluyor.**

Görsel, referans 1'den uyarlanmıştır.

1. Türkiye İstatistik Kurumu. Ölüm Nedeni Istatistikleri. 2019. Ölüm nedeni ve cinsiyete göre ölümler. https://data.tuik.gov.tr/Bulten/Index?p=Olum-ve-Olum-Nedeni-Istatistikleri-2019-33710 Son erişim tarihi: 16.04.2021

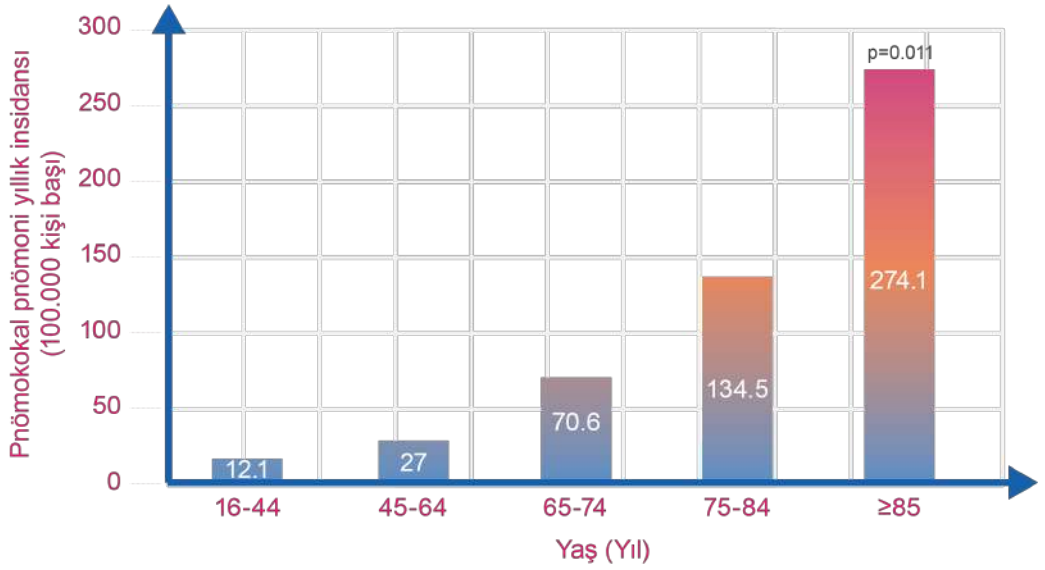
Yaşlılar

…..İnsanlar infeksiyon hastalıklarından erken ölmekten çok, ileri yaşta hastalıklı bir uzamış yaşam riskinden daha çok korkuyor olabilirler

Doherty TM, et al. Gerontology 2020;66:238–248.

Pnömokokal pnömoni insidansı yaşla beraber artar. [1]

Yaş gruplarına göre pnömokokal pnömoni oranı (İngiltere, 2008-20101)



Grafik Referans 1 Tablo 3'ten uyarlanmıştır.

Bu çalışma prospektif, gözlemsel bir kohort çalışması olup, İngiltere'de geniş ölçekli bir eğitim araştırma hastanesinde yürütülmüştür.[1]

1. Bewick T et al. Serotype prevalence in adults hospitalised with pneumococcal non-invasive community-acquired pneumonia. Thorax 2012;67:540e545.

Pnömokokal hastalığı olan erişkinlerde en çok görülen 3 komorbid hastalık[1]

DİYABET

pnömoni için risk faktörüdür.[2]

KOAH

Kronik akciğer hastalığı olanlarda pnömokokal pnömoni **riski 7-10 kat** daha fazladır.[3]

KRONİK KALP HASTALIĞI

Kronik Kalp Hastalığı olan kişilerde Toplumda Gelişen Pnömoni riski **3.3 kat** daha fazladır.[4]

1. Curcio D et al. Redefining risk categories for pneumococcal disease in adults: critical analysis of the evidence. International Journal of Infectious Diseases. 2015; 37:30–35. 2. Kornum J et al. Diabetes, Glycemic Control, and Risk of Hospitalization With Pneumonia. Diabetes Care. 2008;31:1541–1545. 3. Shea K et a l. Rates of Pneumococcal Disease in Adults With Chronic Medical Conditions. Open Forum Infectious D.2014;1(1): 1-9 4. Torres A et al. Which individuals are at increased risk of pneumococcal disease and why? Impact of COPD, asthma, smoking, diabetes, and/or chronic heart disease on community-acquired pneumonia and invasive pneumococcal disease. Thorax. 2015;70:984–989.

Kronik akciğer hastalığı olanlarda
pnömokokal pnömoni riski

7-10 kat

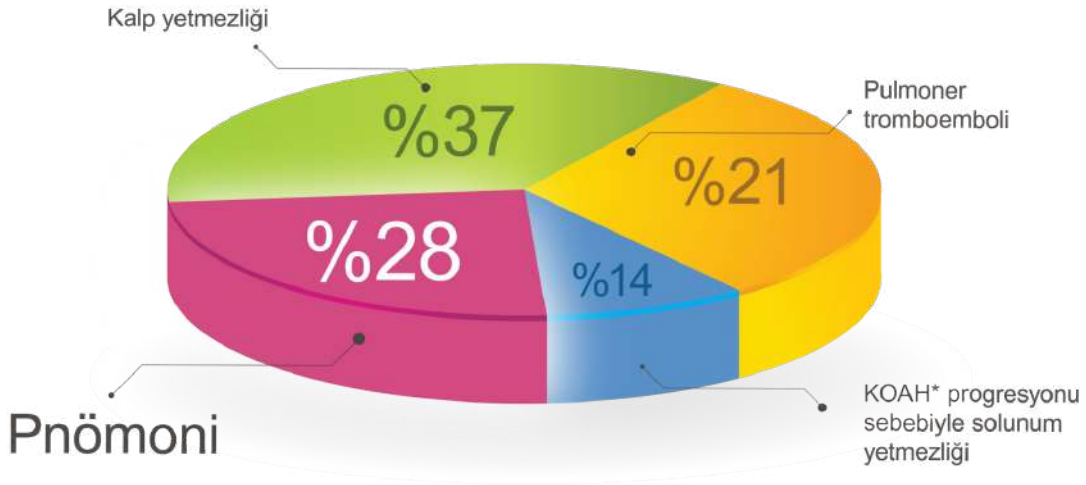
daha fazladır.[1]

2006-2010 yılları arasını kapsayan, kronik eşlik eden hastalığı olan erişkinlerde pnömokok hastalıkları oranını araştıran retrospektif kohort çalışması[1]

*50-64 yaş arası erişkinlerde

1. Shea K et al. Rates of Pneumococcal Disease in Adults With Chronic Medical Conditions. et al. Open Forum Infect Dis. 2014;1(1):1-9.

KOAH*'lı hastaların %28'i pnömoni nedeni ile hayatını kaybediyor.[1]



Grafik Referans 1'den uyarlanmıştır.

*Kronik Obstrüktif Akciğer Hastalığı

1. Zvezdin B et al. A Postmortem Analysis of Major Causes of Early Death in Patients Hospitalized With COPD Exacerbation. CHEST. 2009;136:376–380.

Pnömoni, KOAH alevlenmelerini ve alevlenme nedenli hospitalizasyon riskini arttırır [1]

KOAH tanılı hastalarda,

- Alevlenmelerin **~%50'si bakteriyel** kaynaklıdır ve **en sık etken *S. pneumoniae***'dır.
- Alevlenme nedenli **ilk hospitalizasyonların %36'sının nedeni pnömoni**dir.
- Alevlenme nedeniyle hastaneye yatanlarda **en sık 2. mortalite nedeni, pnömoni**dir. [1]

1. Karadeniz G, Kılınç O, Ölmez A, Özhan MH, Özlü T, Akıncı Özyürek B ve ark. Erişkin kronik akciğer hastalıklarında pnömokok infeksiyonu ve aşı ile korunma. Tuberk Toraks 2020;68(3)

Astım ile pnömoni arasında çift yönlü bir ilişki vardır.[1-3]

Astım varlığı ve astım tedavileri, pnömoni riskini arttırır.[1,2]

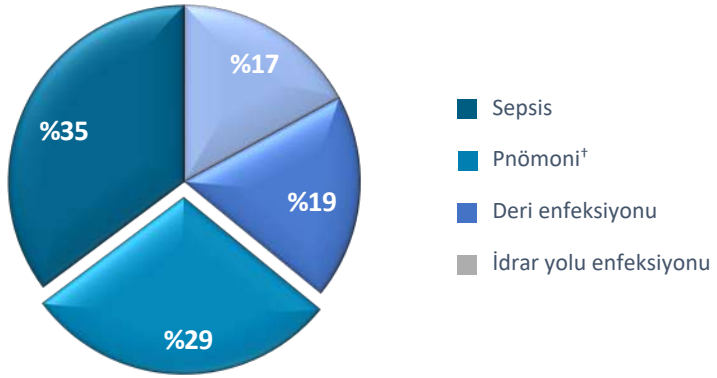
Pnömoni, astım alevlenmelerine yol açar. [3]

1. Juhn Y. J Allergy Clin Immunol. 2014; 134(2): 247–257.e3.
2. Zaidi S, Blakey J. Respirology (2019) 24, 423–430
3. Pelton SI et al. Journal of Asthma and Allergy 2019:12 95–99

Erişkin DM hastalarında enfeksiyon hastalıkları

DM hastalarının yaklaşık yarısı yılda en az bir kez bir enfeksiyon hastalığı için hastaneye yatar ya da doktora başvurur.[1]

DM hastaları için en sık hastaneye yatışa yol açan enfeksiyonlar (ABD, 2011)[2]



DM hastalarında enfeksiyonlar yaygındır ve bu hastalarda pnömoni enfeksiyona bağlı hastaneye yatışın en sık nedenleri arasındadır [1,2]

1. Shah ve ark. Diabetes Care 2003;26:510–3. 2. Korbel ve ark. J Diabetes Complications. 2015;29:192–5.

Diyabetli bireyde komorbid hastalık sayısı arttıkça pnömoni riski artar[1]

1. Curcio A et al. Redefining risk categories for pneumococcal disease in adults: critical analysis of the evidence. Int J Infect Dis. 2015;37:30-5.

Diyabet tedavisindeki ana hedeflerden biri glisemik dalgalanmanın önlenmesidir.[1]

Pnömoni varlığında hiperglisemi ve hipoglisemi görülür. [2,3]

Hipoglisemi, pnömoni nedeniyle hastaneye yatan **diyabetli hastalarda görülen komplikasyonlardan biridir.[4]**

Hipoglisemili hastalarda;[5]

- 48 saatlik mortalite oranı 9 KAT
- 30 günlük mortalite oranı 3 KAT daha fazladır.*[5]

Pnömonili** hastalarda **hiperglisemi pnömoniyi kötüleştirir.[6]**

Hastaneye başvuru sırasında **kan glukoz düzeyindeki yükseklik, yoğun bakım ünitesinde yatış ve hastanede ölüm riskinde artış ile ilişkilidir.[6]**

1. Jan IS, Tsai TH, Chen JM, et al.. Intern J Infect Dis 2009;13:570—76. **2.** Castellonos MR,Szerszen A, Saifan C, et al.. Int Arch Med 2010;3:16.**3**. Macintyre EJ, Am J Med 125(10) 2012) **4.** BaderMS, et al. Am J Med Sci. 2016 Jul;352(1):30-5 **5.** Mortensen EM, Garcia S, Leykum L, et al. Am J Med Sci 2010;339:10.1097/ MAJ.0b013e3181ca43fe. 6. Jennsen VA et al. ERJ Open Res. 2017; 3(2): 00114-2016.

KRONİK KALP HASTALIĞI

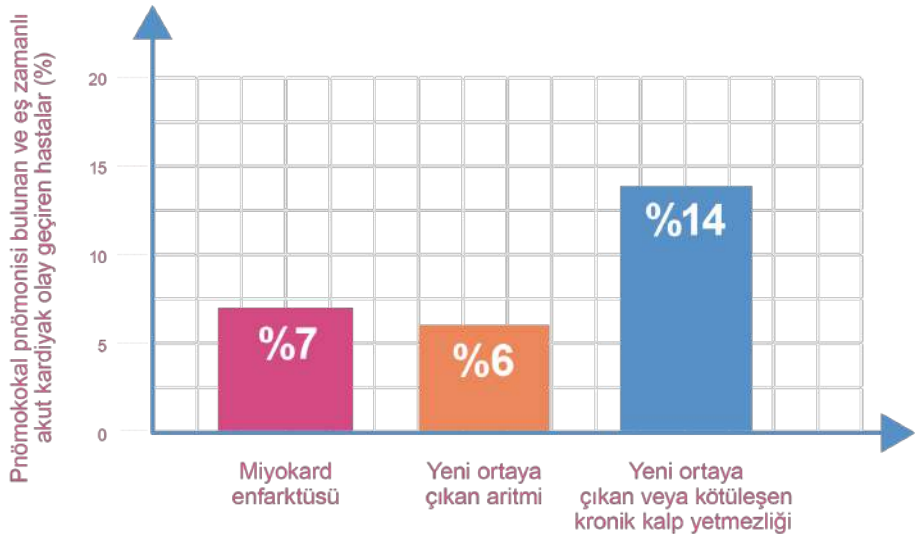
olan kişilerde
Toplumda Gelişen Pnömoni
riski **3.3 kat daha fazladır.**[1]

Konjestif kalp yetmezliği, kardiyovasküler ve kapak hastalıkları [1]

1. Torres A et al. Which individuals are at increased risk of pneumococcal disease and why? Impact of COPD, asthma, smoking, diabetes, and/or chronic heart disease on community-acquired pneumonia and invasive pneumococcal disease. Thorax. 2015;70:984–989.

Pnömokokal pnömonili hastalar **eşzamanlı akut kardiyak olay geçirme riski** taşırlar. [1]

Pnömokokal pnömoni ve akut kardiyak olay bulunan hastalarda mortalite, sadece pnömokokal pnömonisi bulunanlara kıyasla 3 kat daha yüksektir ($p<0.008$).[1]

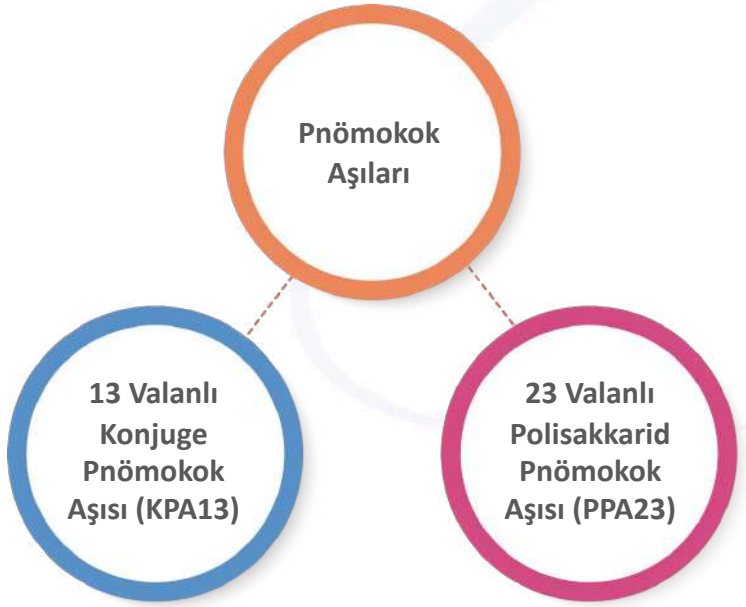


Grafik Referans 1'den uyarlanmıştır.

2001-2005 yılları arasında Amerika Birleşik Devletleri'nde pnömokokal pnömoni nedeniyle hastaneye yatırılan 170 erişkine ait kayıt incelemesi[1]

1. Musher D et al. The Association between Pneumococcal Pneumonia and Acute Cardiac Events. Clinical Infectious Diseases. 2007; 45:158–65.

Günümüzde erişkinler için iki tip pnömokok aşısı mevcuttur.[1,2]



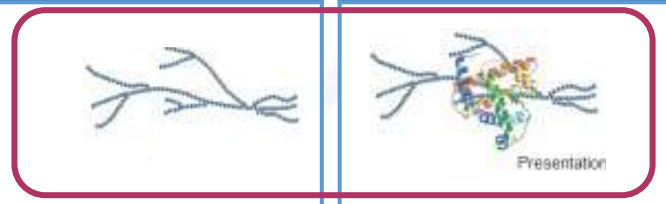
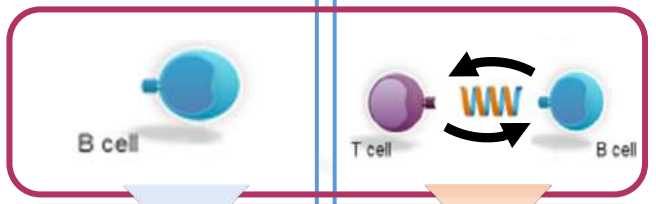
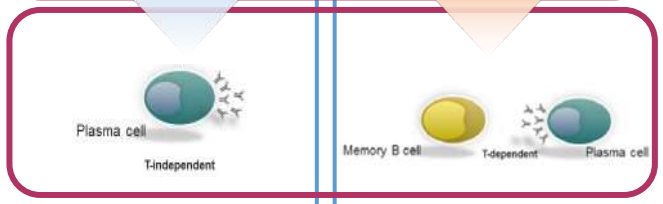
KPA13

Tek bir tip taşıyıcı protein (CRM197*) içerir.[1]

*Toksik olmayan difteri toksin taşıyıcı protein[3]

1. 13 valanlı Konjuge Pnömokok Aşısı Kısa Ürün Bilgisi 2. 23 Valanlı Polisakkarid Pnömokok Aşısı Kısa Ürün Bilgisi 3. Çelebi S. Epidemiology andPrevention of Bacterial Meningitis and Meningococcal Serogroup B Infection. J Pediatr Inf. 2014; 8: 33-9.

Konjügasyonun bilimsel zemini

Polisakkarid aşı[1,2]		Konjüge aşı[1,2]
Polisakkarid antijenler ihtiva eder.		Taşıyıcı bir protein ile kovalent olarak bağlı polisakkarid antijenler ihtiva eder.
Antikor üretimi için B hücrelerini uyarır.		B hücrelerinin antikor üretmesi için T hücrelerini uyarır ve immün bellek üretir.
T hücreden bağımsız immün yanıt sağlar.		T hücre *bağlı immün yanıt* sağlar.

Bellek B hücre üretimi, erişkinlerde KPA13 ile çalışılmamıştır.

KPA13, 13 valanlı konjuge pnömokok aşısı.

1. Siegrist CA. In: Plotkin, et al., eds. Vaccines, 5th edn. 2008:17–36. 2. Pollard AJ, et al. Nat Rev Immunol 2009;9:213–20.

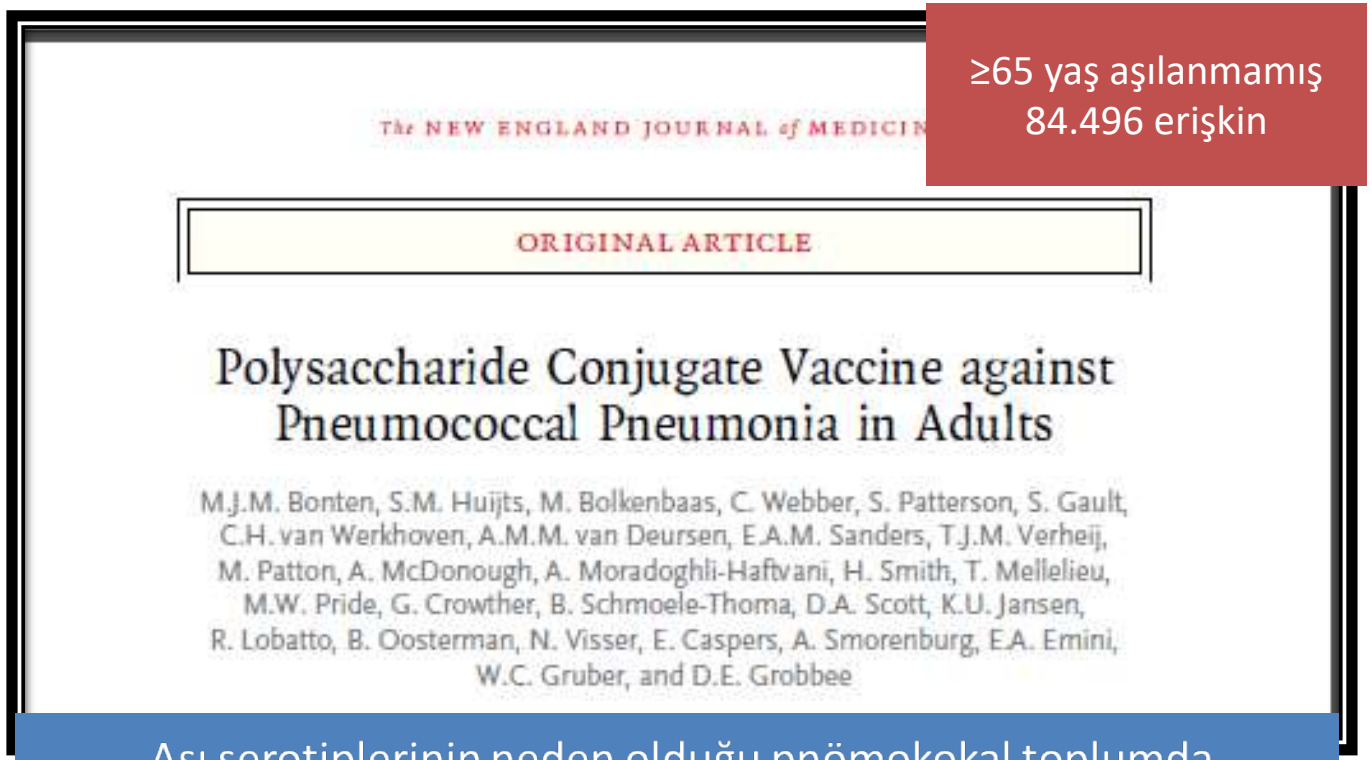
Pnömokok Aşıları Arasındaki Farklar

Temel Özellikler / Aşının Tipi	13 Valanlı Konjuge Pnömokok Aşısı (KPA13)	23 Valanlı Polisakkarid Pnömokok Aşısı (PPA23)
Serotipler	1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F[1]	1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, 33F[2]
Aşı başlangıç yaşı	6 hafta[1]	2 yaş[2]
Bağışıklık Yanıtı	T lenfosit bağımlı[1,3]	T lenfosit bağımsız[3,4]
OPA Düzeyi	Yüksek OPA düzeyi[5]	Düşük OPA düzeyi[6]
İmmün yanıt	Uzun dönemli[3]	Kısa dönemli[3]
Nazofarengeal taşıyıcılık (uzun dönemde azalma)	Evet[7,8]	Hayır[9]

OPA: Opsonofagositik Aktivite

1. 13 valanlı Konjuge Pnömokok Aşısı Kısa Ürün Bilgisi 2. 23 valanlı polisakkarit pnömokok aşısı kısa ürün bilgisi 3. Blanchard-Rohner G, Pollard AJ. E xper t Rev Vaccines. 2011;10(5):673-84. 4. Goldblatt D. Clin Exp Immunol. 2000;119(1):1-3.5. Jackson L et al. Vaccine. 2013; 31: 3594-3602. 6. Schenkein J et al. Vaccine. 2 008;26(43):5521-5526.7. Egere U et al. P LOS ONE. 2 012;7(11):e49143. 8. Desai AP et al. Pediatr Infect Dis J. 2015;34(11):1168-74. 9. Boelsen L et al. Vaccine. 2 015; 3 3(42): 5 708–5714.

Mart 2015 tarihinde New England Journal of Medicine'da yayımlanan CAPITA çalışması (Erişkinlerde Toplum gelişen Pnömoni İmmünizasyon Çalışması)

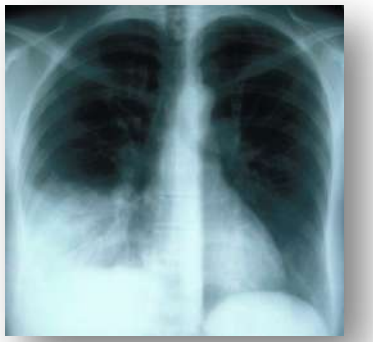


≥65 yaş aşılanmamış
84.496 erişkin

Aşı serotiplerinin neden olduğu pnömokokal toplumda gelişen pnömoni ve invaziv pnömokok hastalığının önlenmesinde KPA13®'ün etkinliğinin değerlendirildiği Faz IV, çift kör, randomize, plasebo kontrollü, klinik çalışma[1,2]

Bonten MJ, et al. N Engl J Med 2015;372:1114–25.

CAPiTA ÇALIŞMASI
N Engl J Med 372:12:March 2015



	Etkinlik	P-değeri
VT-CAP	%45.56	.0006
VT-NB CAP	%45	.0067
VT-IPD	%75	.0005

Acute pneumonia and the cardiovascular system

Ayaktan pnömonilerin % 21'i KV problem ile komplike - KV FONKSİYONLARIN ARAŞTIRILMASI

Lancet 2013; 381
Published Online January 16, 2012 http://dx.doi.org/10.1016/S0140-6736(12)61266-5

Department of Medicine, University of Ottawa, ON, da (V F Corrales-Medina MD, S Shachkina MD); Ottawa Hospital Research Institute, ON, Canada (V F Corrales-Medina, Shachkina); Departments of Medicine and Molecular

ects on the cardiovascular system at all severities of infection. Pneumonia tends to affect individuals who are also at high cardiovascular risk. Results of recent studies show that about a quarter of adults admitted to hospital with pneumonia develop a major acute cardiac complication during their hospital stay, which is associated with a 60% increase in short-term mortality. These findings suggest that outcomes of patients with pneumonia can be improved by prevention of the development and progression of associated cardiac complications. Before this hypothesis can be tested, however, an adequate mechanistic understanding of the cardiovascular changes that occur during pneumonia, and their role in the trigger of various cardiac complications, is needed. In this Review, we summarise knowledge about the burden of cardiac complications in adults with acute pneumonia, the cardiovascular response to this infection, the potential effects of commonly used cardiovascular and anti-infective drugs on these associations, and possible directions for future research.

MAKROLİD,FQ

	Effect of pneumonia
Vascular endothelium and peripheral vessels	Impaired reactive hyperaemia response and response to nitric oxide;[35] decreased peripheral vascular resistance in most young adults, but increased peripheral vascular resistance in up to a third of middle-aged adults (no data available for elderly patients);[36-39] increased concentrations of endothelin-1 and adrenomedullin[40,41]
Myocardium	Depression of left ventricular function;[37,38,42] myocarditis;[43] increased concentrations of troponins, BNP, and ANP[44-47]
Cardiac rhythm	Acute cardiac arrhythmias[36,48,49]
Coronary arteries	Possible acute inflammatory changes in atherosclerotic plaques;[50-52] possible coronary vasoconstriction[53]
Pulmonary circulation	Increased pulmonary artery pressures[54]
Cardiac autonomic function	Impairment of cardiovascular autonomic reflexes[55]
Coagulation	Increased procoagulant activity[56-58]
Renal function and fluid and sodium balance	Increased production of vasopressin;[41,59,60] decreased ACE activity;[61-63] water retention;[59] acute kidney injury[64,65]

BNP=B-type natriuretic peptide. ANP=atrial natriuretic peptide. ACE=angiotensin-converting enzyme.

Table: Effects of pneumonia on the cardiovascular system

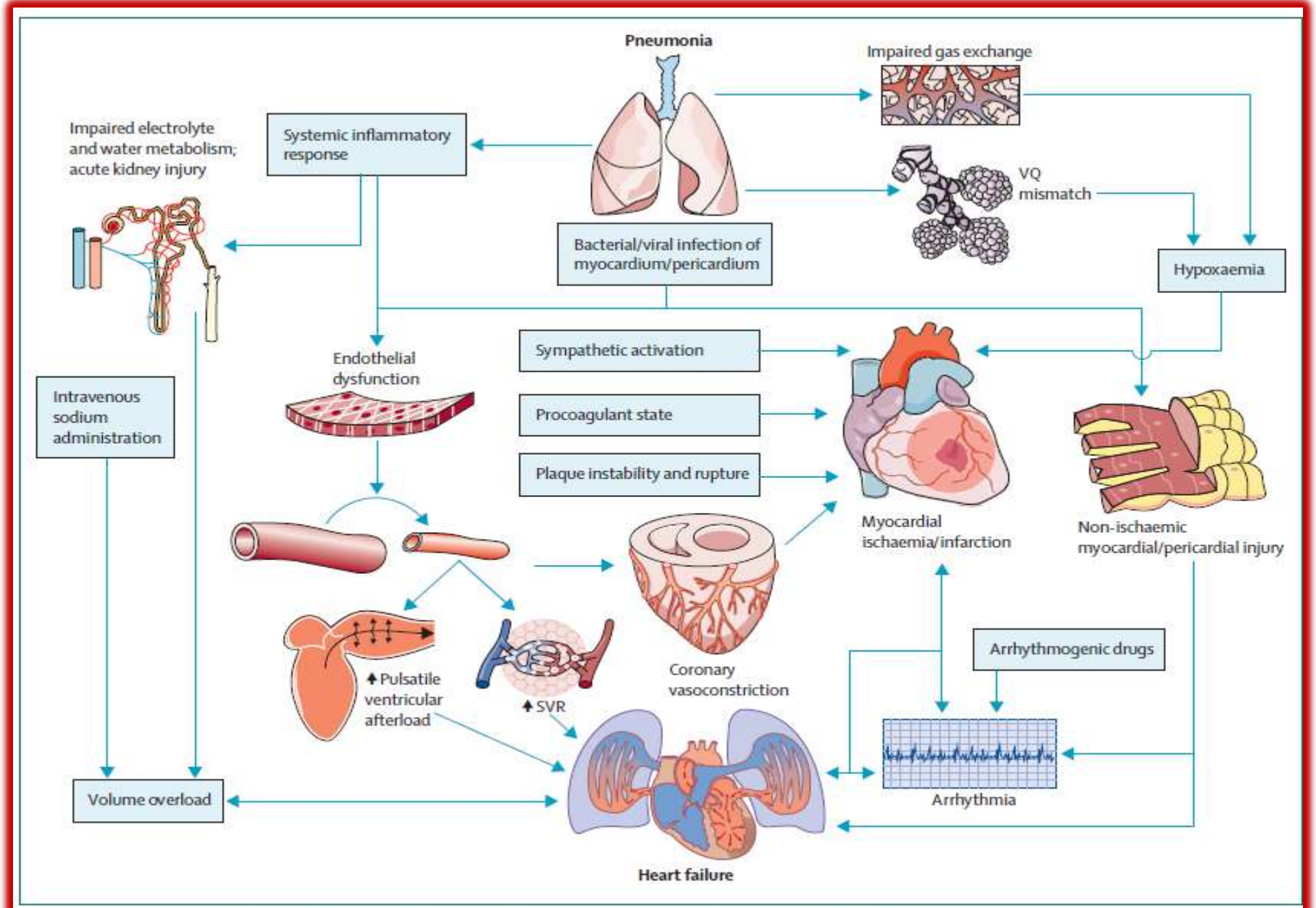


Figure 2: **Proposed pathophysiological mechanisms contributing to cardiac complications in patients with acute pneumonia**
VQ=ventilation–perfusion mismatch. SVR=systemic vascular resistance. Image of heart and lungs at the bottom of the figure reproduced with permission from Peter Gardiner at clinicalskills.net.

Risks of Cardiac Arrhythmia and Mortality Among Patients Using New-Generation Macrolides, Fluoroquinolones, and β-Lactam/β-Lactamase Inhibitors: A Study

Clinical Infectious Diseases® 2015;60(4):566–77

Hsu-Wen Chou,[1,a] Jiun-Ling Wang,[2,3,a] Chia-Hsuin Chang,[1,3] Chao-Lun Lai,[1,3,4] Mei-Shu Lai,[1,5] and K. Arnold Chan[6,7]

Background. Previous studies have demonstrated increased cardiovascular mortality related to azithromycin and levofloxacin. Risks associated with alternative drugs in the same class, including clarithromycin and moxifloxacin, were unknown. We used the Taiwan National Health Insurance Database to perform a nationwide, population-based study comparing the risks of ventricular arrhythmia and cardiovascular death among patients using these antibiotics.

Methods. Between January 2001 and November 2011, a total of 10 684 100 patients were prescribed oral azithromycin, clarithromycin, moxifloxacin, levofloxacin, ciprofloxacin, or amoxicillin-clavulanate at outpatient visits. A logistic regression model adjusted for propensity score was used to calculate the odds ratios (ORs) and 95% confidence intervals (CIs) for adverse cardiac outcomes occurring within 7 days after the initiation of antibiotic treatment.

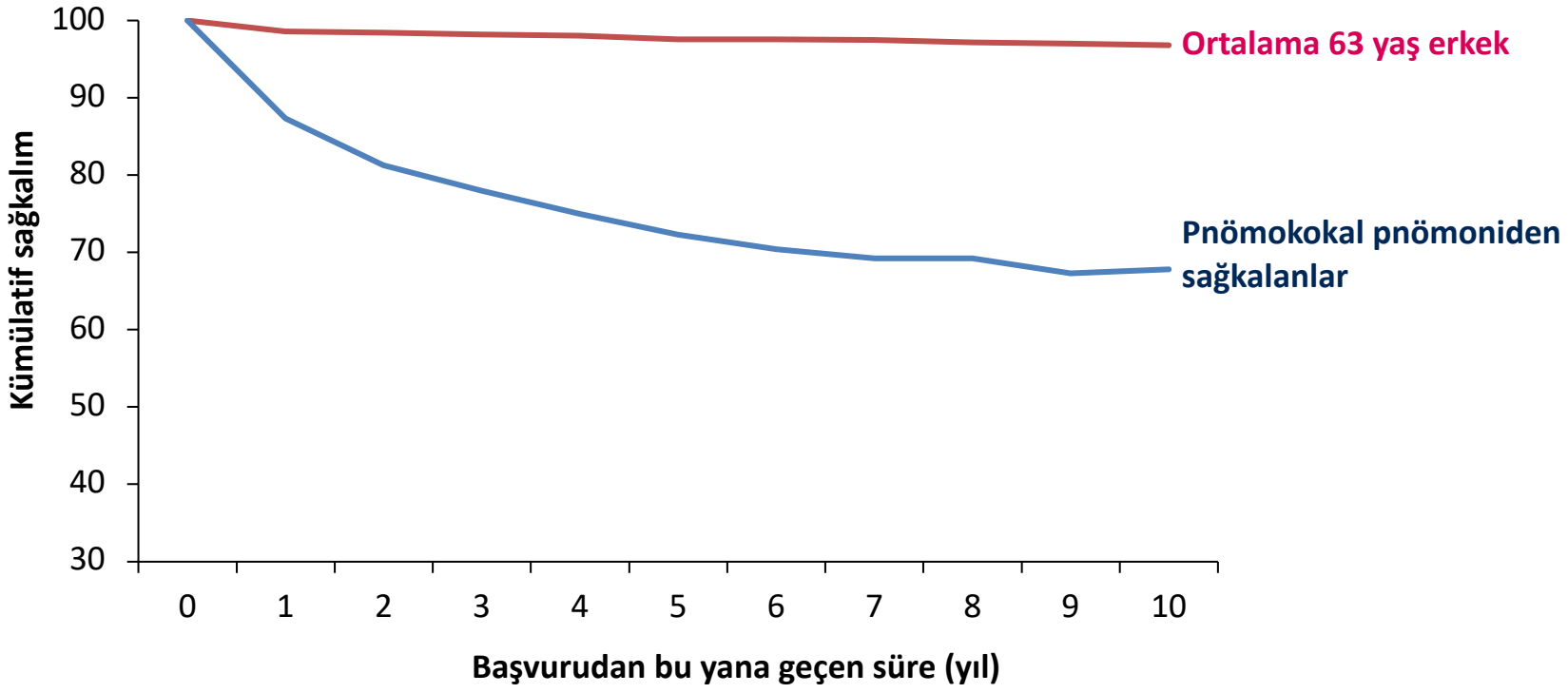
Results. Compared with amoxicillin-clavulanate treatment, the use of azithromycin and moxifloxacin was associated with significant increases in the risks of ventricular arrhythmia and cardiovascular death. The adjusted ORs for ventricular arrhythmia were 4.32 (95% CI, 2.95–6.33) for azithromycin, 3.30 (95% CI, 2.07–5.25) for moxifloxacin, and 1.41 (95% CI, .91–2.18) for levofloxacin. For cardiovascular death, the adjusted ORs for azithromycin, moxifloxacin, and levofloxacin were 2.62 (95% CI, 1.69–4.06), 2.31 (95% CI, 1.39–3.84), and 1.77 (95% CI, 1.22–2.59), respectively. No association was noted between clarithromycin or ciprofloxacin and adverse cardiac outcomes.

Conclusions. Healthcare professionals should consider the small but significant increased risk of ventricular arrhythmia and cardiovascular death when prescribing azithromycin and moxifloxacin. Additional research is needed to determine whether the increased risk of mortality is caused by the drugs or related to the severity of infection or the pathogens themselves.

Keywords. ventricular arrhythmia; cardiovascular death; azithromycin; moxifloxacin; levofloxacin.

Pnömokokal pnömoni, uzun dönem sağkalımın kısalması ile ilişkilidir.[1]

Kaplan–Meier eğrisi, ortalama 63 yaşındaki bir Amerikalı erkek hastanın beklenen 10 yıllık sağ kalım süresine kıyasla, pnömokokal pnömoniden sağ kalan 344 hastanın* 10 yıllık kümülatif sağkalımını göstermektedir.



*Son 1 ay sağkalan hastalar, başvuru sırasında PORT skor şiddet indeksine (PSI) göre derecelendirildi.

Kaynak: 1. Sandvall B, et al. Clin Infect Dis 2013;56:1145–1146, by permission of Oxford University Press.

İPH VE PNÖMOKOKAL PNÖMONİ RİSKİ

Konak faktörler				
Yaş[1]	Riskli grup[2,3,5,6]	Yüksek riskli grup[2,3,5,6]	Çevresel faktörler[3,4]	Davranış faktörleri[2,3]
• ≤ 2 yaş • ≥ 65 yaş	• Kronik kalp hastalığı • Kronik akciğer hastalığı* • Diyabet • Fonksiyonel veya anatomik aspleni • Kronik karaciğer hastalığı • Serebrospinal sıvı kaçakları	• HIV enfeksiyonu • Kronik böbrek yetmezliği, nefrotik sendrom • Kanser (solid ve hematolojik) • Solid organ transplantasyonu • Otoimmün hastalıklar • İmmünsüpresif tedavi ve kortikosteroidler • Primer immün yetmezlikler	• Geçirilmiş viral solunum yolu enfeksiyonu (örn. influenza) • Bir kurumda konaklama (örn. bakım evi)	• Sigara • Alkol kullanımı

*Kronik obstrüktif akciğer hastalığı, amfizem ve astım dahil olmak üzere.

HIV, insan immün yetmezlik virüsü; İPH, invaziv pnömokok hastalığı.

1. Centers for Disease Control and Prevention. Available from: http://www.cdc.gov/abcs/reports-findings/survreports/spneu12.pdf. Accessed March 2015. 2. Centers for Disease Control and Prevention. MMWR Morb Mortal Wkly Rep 2010;59:1102–6. 3. Musher DM. In: Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 7th edn, 2010:2623–42. 4. Centers for Disease Control and Prevention. Available from: http://www.cdc.gov/h1n1flu/vaccination/provider/provider_pneumococcal.htm. Accessed March 2015. 5. van Hoek AJ, et al. J Infect 2012;65:17–24. 6. Klemets P, et al. BMC Infect Dis 2008;8:96.

Pnömokok Aşı Pozolojisi

- Yüksek Riskli Gruplarda(HIV, KBY, malignite..)

KPA13 → KPA23

en az 8 hafta sonra

- Riskli Gruplarda (Diyabet, Astım, KOAH, 65yaş..)

KPA13 → KPA23

en az 1 yıl sonra

MAJOR ARTICLE

Prevention of Acute Myocardial Infarction and Stroke among Elderly Persons by Dual Pneumococcal and Influenza Vaccination: A Prospective Cohort Study

Ivan F. N. Hung,[1,2] Angela Y. M. Leung,[3] Daniel W. S. Chu,[4] Doris Leung,[3] Terence Cheung,[2] Chi-Kuen Chan,[2] Cindy L. K. Lam,[2] Shao-Haei Liu,[4] Chung-Ming Chu,[4] Pak-Leung Ho,[1] Sophia Chan,[3] Tai-Hing Lam,[4] Raymond Liang,[2] and Kwok-Yung Yuen[1]

[1]Infectious Disease Division, Queen Mary Hospital, State Key Laboratory of Emerging Infectious Diseases, Carol Yu Centre for Infection, The University of Hong Kon, Departments of [2]Medicine and [3]Nursing Studies and [4]School of Public Health, The University of Hong Kong, [5]Family Medicine and Primary Healthcare and [6]Department of Infection, Emergency, and Contingency, Hospital Authority, [7]Centre for Health Protection, Department of Health, and [8]Department of Medicine, United Christian Hospital, Hong Kong SAR, China

2007 -2008:Prospektif bir çalışma, Kronik hastalığı nedeni ile trivalan inaktif aşı ve PPA 23 aşısı verilen 65 yaş hastalar ölüm, hastaneye yatma , pnömoni,iskemik atak, MI ve koroner ve yoğun bakıma yatma bakımından 31 mart 2009 (1 yıl)izlenmiş

Toplam 36,636 kişi:Aşılanmayan 25,393 kişi

İki aşı verilen 7292

İnfluenza aşısı tek başına 2076 kişi

PPA23 tek başına 1875 kişi

from developing complications from respiratory, cardiovascular, and cerebrovascular diseases, thereby reducing hospitalization, coronary or intensive care admissions, and death.

Pneumococcal and influenza infections can cause se- population. In Hong Kong, overcrowded living con-

İki aşı verilenlerde ölüm, pnömoni , inme ve MI aşılanmayanlara göre daha düşük bulunmuş

1058-4838/2010/5109-0003$15.00
DOI: 10.1086/656687

elderly persons, defined as those aged ≥65 years in most

European Journal of Preventive Cardiology
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Hospitalization for CAP is associated with an up to eight-fold increase in the risk of acute myocardial infarction (MI) and many 'pneumonia-related deaths' are related to non-infectious complications including acute coronary syndrome (ACS) events.[6,7] Many proposed pathophysiological mechanisms contribute to cardiovascular (CV) complications including endothelial dysfunction, plaque instability, inflammation, sympathetic activation, hypercoagulability, tissue hypoxaemia, depression of ventricular function, arterial stiffness, volume overload and arrhythmias.[8,9]

Conclusion: PV is associated with decreased risk of cardiovascular events and mortality. This protective effect increases at older age and in high cardiovascular risk subjects and decreases as the time elapses from PV. PV decreases the risk of MI and cerebrovascular events in the elderly.

Vila-Corcoles et al. BMC Public Health 2012, 12:222
http://www.biomedcentral.com/1471-2458/12/222

BMC Public Health

RESEARCH ARTICLE Open Access

Clinical effectiveness of pneumococcal vaccination against acute myocardial infarction and stroke in people over 60 years: the CAPAMIS study, one-year follow-up

Angel Vila-Corcoles[1,2*], Olga Ochoa-Gondar[1], Teresa Rodriguez-Blanco[2], Antonia Gutierrez-Perez[2], Angel Vila-Rovira[2], Frederic Gomez[3], Xavier Raga[4], Cinta de Diego[1], Eva Satue[1] and Elisabet Salsench[1], for EPIVAC Study Group[1]

Abstract

Background: Conflicting results have been recently reported evaluating the relationship between pneumococcal vaccination and the risk of thrombotic vascular events. This study assessed the clinical effectiveness of the 23-valent polysaccharide pneumococcal vaccine (PPV23) against acute myocardial infarction and ischaemic stroke in older adults.

Methods: Population-based prospective cohort study conducted from December 1, 2008 until November 30, 2009, including all individuals ≥ 60 years-old assigned to nine Primary Care Centres in Tarragona, Spain (N = 27,204 individuals). Primary outcomes were hospitalisation for acute myocardial infarction and/or ischaemic stroke. All cases were validated by checking clinical records. The association between pneumococcal vaccination and the risk of each outcome was evaluated by Multivariable Cox proportional-hazard models (adjusted by age, sex, influenza vaccine status, presence of comorbidities and cardiovascular risk factors).

Results: Cohort members were followed for a total of 26,444 person-years, of which 34% were for vaccinated subjects. Overall incidence rates (per 1000 person-years) were 4.9 for myocardial infarction and 4.6 for ischaemic stroke. In the multivariable analysis, vaccination was associated with a marginally significant 35% lower risk of stroke (hazard ratio [HR]: 0.65; 95% confidence interval [CI]: 0.42-0.99; $p = 0.046$). We found no evidence for an association between pneumococcal vaccination and reduced risk of myocardial infarction (HR: 0.83; 95% CI: 0.56-1.22; $p = 0.347$).

Conclusions: Our data supports a benefit of PPV23 against ischaemic stroke among the general population over 60 years, suggesting a possible protective role of pneumococcal vaccination against some acute thrombotic events.

Pneumococcal Vaccination and Risk of Acute Myocardial Infarction and Stroke in Men

Hung Fu Tseng, PhD
Jeffrey M. Slezak, MS
Virginia P. Quinn, PhD
Lina S. Sy, MPH
Stephen K. Van Den Eeden, PhD
Steven J. Jacobsen, MD, PhD

Context Multiple studies have shown that preventing influenza by vaccination reduces the risk of vascular events. However, the effect of pneumococcal polysaccharide vaccine on vascular events remains controversial.

Objective To examine the association between pneumococcal vaccination and risk of acute myocardial infarction (MI) and stroke among men.

Design, Setting, and Participants A prospective cohort study of Kaiser Permanente Northern and Southern California health plans with 84 170 participants aged 45 to 69 years from the California Men's Health Study who were recruited between January 2002 and December 2003, and followed up until December 31, 2007. The cohort was similar to the population of health plan members and men who responded to a general health survey in California on important demographic and clinical characteristics. Demographic and detailed lifestyle characteristics were collected from surveys. Vaccination records were obtained from the Kaiser Immunization Tracking System.

Main Outcome Measure Incidence of acute MI and stroke during the follow-up period in men who had no history of such conditions.

Results During follow-up, there were 1211 first MIs in 112 837 vaccinated person-years (10.73 per 1000 person-years) compared with 1494 first MI events in 246 170 unvaccinated person-years (6.07 per 1000 person-years). For stroke, there were 651 events in 122 821 vaccinated person-years (5.30 per 1000 person-years) compared with 483 events in 254 541 unvaccinated person-years (1.90 per 1000 person-years). With propensity score adjustment, we found no evidence for an association between pneumococcal vaccination and reduced risk of acute MI (adjusted hazard ratio [HR], 1.09; 95% confidence interval [CI], 0.98-1.21) or stroke (adjusted HR, 1.14; 95% CI, 1.00-1.31). An inverse association was also not found in men of different age and risk groups. The results appeared to be consistent, because using more specific *International Classification of Diseases, Ninth Revision* codes for the outcome definition did not change the estimations.

Conclusion Among a cohort of men aged 45 years or older, receipt of pneumococcal vaccine was not associated with subsequent reduced risk of acute MI and stroke.

JAMA. 2010;303(17):1699-1706 www.jama.com

MULTIPLE STUDIES HAVE shown that vaccination against influenza can reduce the risk of recurrent myocardial infarction (MI), sudden cardiac death, cardiac hospital admissions, need for revascularization, and stroke.[1-5] A similar finding has been recently reported for pneumococcal polysaccharide vaccine.[6] In the study by Lamontagne et al,[6] the authors hypothesized that besides preventing bacterial infections, pneumococcal vaccination may protect against cardiovascular events by decreasing the extent of atherosclerosis. There were, however, several potential limitations of this study that raise questions about the validity of the results, including preferential inclusion of a healthier cohort, confounding from dietary factors, physical activity, and family his-

ERİŞKİN BAĞIŞIKLAMADA HEDEF: HEALTHY PEOPLE 2010 / 2020 - CDC

ELİMİNASYON;
Difteri, KKK, Tetanoz

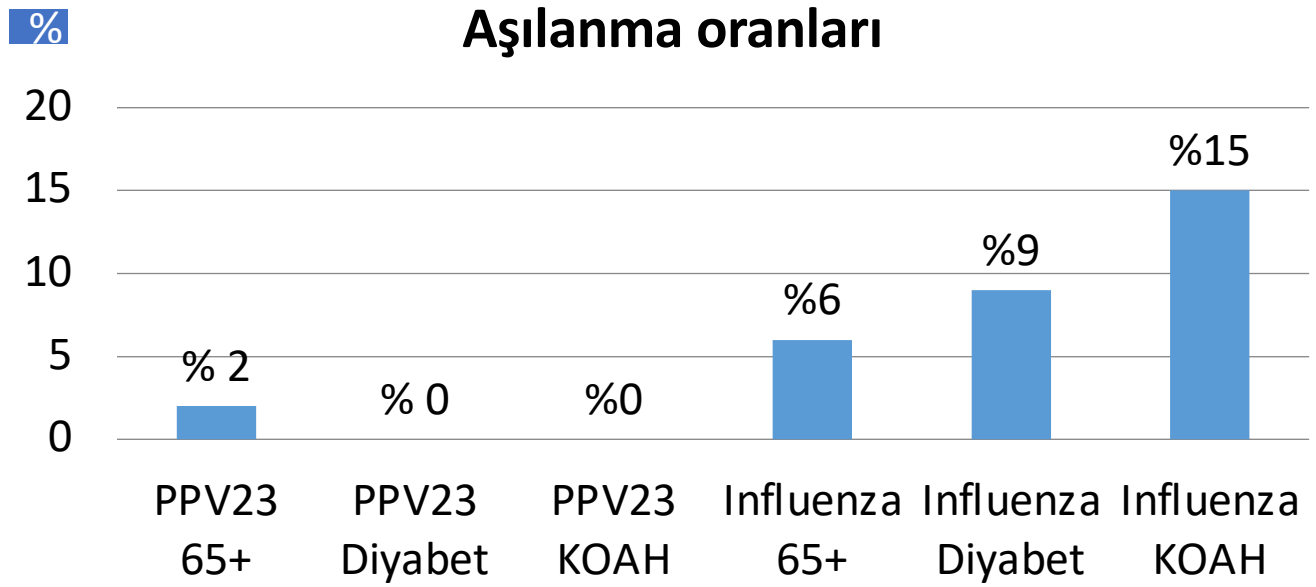
%75 AZALTMA;
Hepatit A ve B

Kanada, ABD;
İnfluenza%30-40

UYUM; ≥ 65 yaş ; İnfluenza ve en az 1 doz pnömokok aşısı 90%

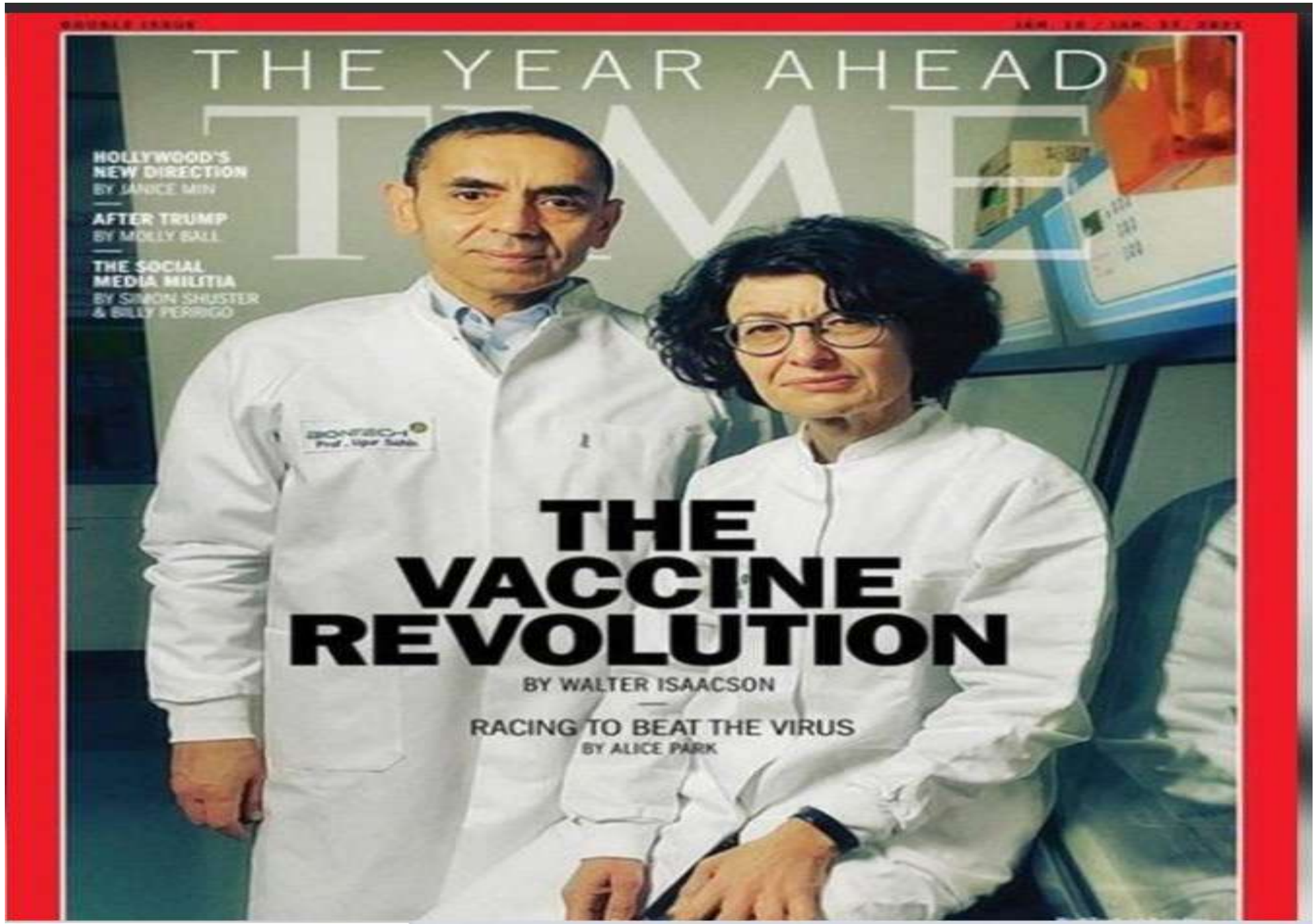
18-64 yaş ,yüksek risk: pnömokok aşısı %60 uyum, >6 ay influenza aşısı , %70 , SP %90

Türkiye; Erişkin Aşılama Oranları



TIHUD, Adult Vaccine Working Group **2002**


U.Kohl
.Sana attığım email'i almadın mı?


THE YEAR AHEAD
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SORULARINIZ?

Prof. Dr. Esin Şenol