ERİŞKİN AŞILAMASININ HEDEFİNDEKİ AŞILAR

Prof. Dr. Esin Şenol

ERİŞKİN AŞILAMA

- Çocuk bağışıklamasına göre daha az biliniyor ve kabul görüyor
- AŞI İLE ÖNLENEBİLİR HASTALIK: 50.000 erişkin/yıl vs. 500 çocuk ölüyor
- AÖH- erişkinlerde önemli mortalite ve hospitalizasyon nedeni

Mitchell D, 2010, Trust for Amrica's Health Report

There are many things we want to pass on to our loved ones, illness is not one of them

You want to pass on family traditions, a grandmother's quilt, or dad's love of books – but no one wants to pass on a serious illness. Take charge of your health and help protect those around you by asking about vaccines at your next doctor's visit.

Vaccinating our children is commonplace in the United States. But few adults know they need vaccines other than flu vaccine and even fewer are fully vaccinated. Are you one of the millions of adults not aware of the vaccines you need?

Each year, tens of thousands of adults needlessly suffer, are hospitalized, and even die as a result of diseases that could be prevented by vaccines. However, a recent national Centers for Disease Control and Prevention (CDC) survey showed that most U.S. adults are not even aware that they need vaccines throughout their lives to protect against diseases like pertussis, hepatitis, shingles and pneumococcal disease.

Not only can vaccine-preventable diseases make you very sick, but if you get sick, you may risk spreading the disease to others. That's a risk most of us do not want to take. Infants, older adults and people with weakened immune systems (like those undergoing

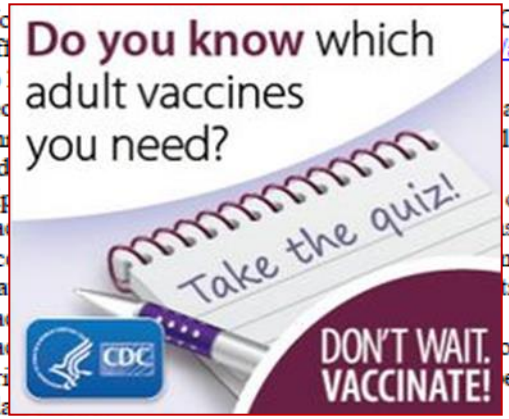
health departments. Visit vaccine.healthmap.org to help find a vaccine provider near you. Most health insurance plans cover the cost of recommended vaccines–a call to your insurance provider can give you the details.

What vaccines do you need?

All adults should get:
* Annual flu vaccine to protect against seasonal flu
* Td/Tdap to protect against tetanus, diphtheria and pertussis

Some additional vaccines you may need (depending on your age, health conditions, and other factors) include:
* Hepatitis A
* Hepatitis B
* Human Papillomavirus (HPV)
* Meningococcal
* Pneumococcal
* Shingles

Traveling overseas? There may be additional vaccines you need depending on the location. Find out at www.cdc.gov/travel.



For more information about adult vaccines, visit: cdc.gov/vaccines/adults.

"Güvenli su hariç başka hiç bir yöntem, hatta antibiyotikler bile mortalite azalması üzerine bu kadar büyük bir etkiye sahip olmamıştır."

Plotkin S. ve ark., Vaccines, 2011

"AŞILARIN BİLİMSEL BİR BULUŞ OLARAK İSTENİLEN ETKİYİ YAPMASI ANCAK UYGULANMALARI İLE MÜMKÜN OLACAKTIR"

Edward Jenner, 1796

Aşılar Olmasaydı...

Çocuk felci 10,000 çocuğu felç edecekti.

Kızamıkçık 2,000 kadar yeni doğanda doğumsal bozukluklara ve zeka geriliğine yol açacaktı.

Kızamık yaklaşık 4 milyon çocuğu enfekte edecek ve 3,000 çocuğun ölümüne yol açacaktı.

Difteri okul çağındaki çocuklarda en sık ölüm nedenini oluşturacaktı.

Hib adı verilen bakteri 25,000 çocukta menenjite neden olacak ve kalıcı beyin hasarına yol açacaktı.

Boğmaca çoğu 1 yaşından küçük olan 8,000 çocuğun ölümüne neden olacaktı.

Erişkinler Neden Aşılanır?

"Yakalama" programları

Yeni Aşılar

(HPV, menengokokal konjuge aşı, TdaP, Zoster)

Yaşla azalan immunite ve artan duyarlılık

Özel bir risk

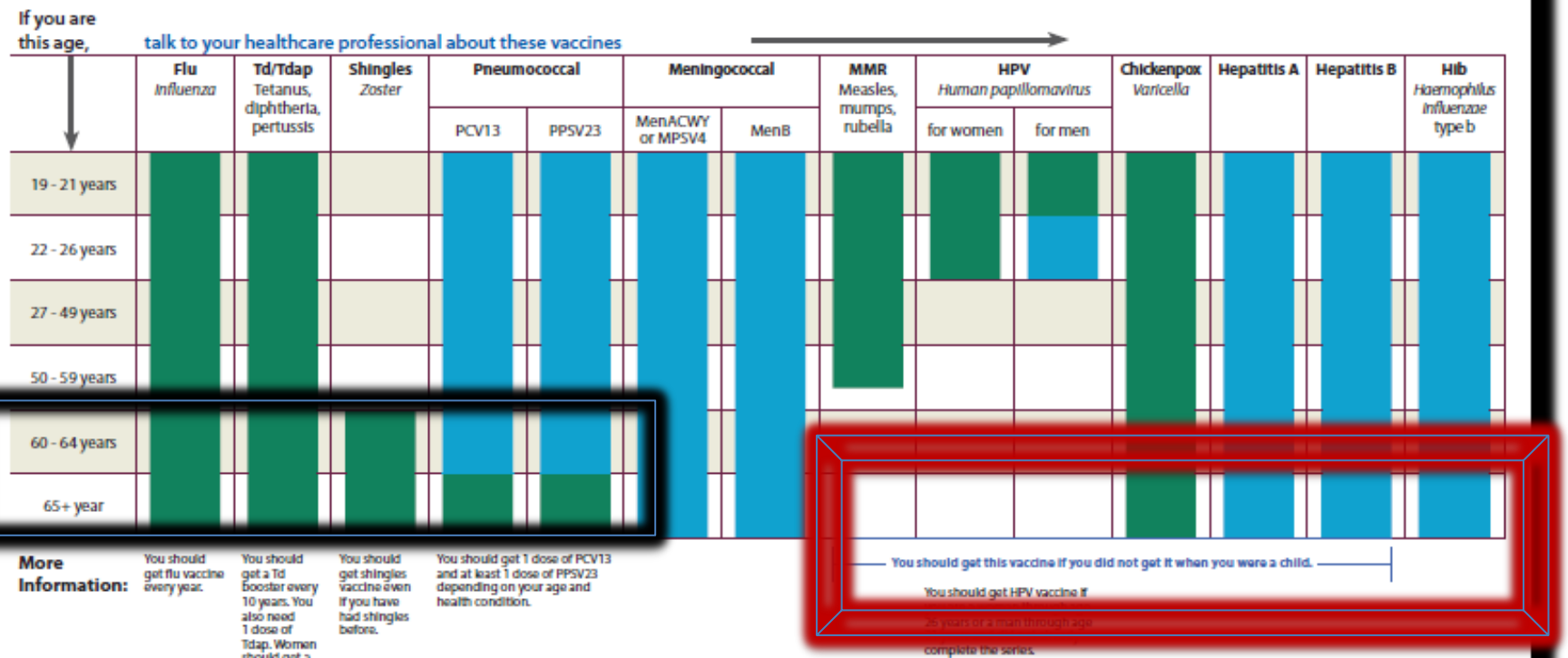
(hastalık, meslek, seyahat)

Erişkinlerde Aşı ile Önlenebilir Hastalıklar

Difteri, Boğmaca, Tetanoz	Kızamık, Kızamıkçık, Kabakulak	Influenza
Pnömokokal Hastalıklar	Hepatit A ve B	Su çiçeği
Meningokokal Hastalıklar	Human papilloma virus	Herpes zoster

INFORMATION FOR ADULT PATIENTS

2016 Recommended Immunizations for Adults: By Age



More Information:

- You should get flu vaccine every year.
- You should get a Td booster every 10 years. You also need 1 dose of Tdap. Women should get a Tdap vaccine during every pregnancy to help protect the baby.
- You should get shingles vaccine even if you have had shingles before.
- You should get 1 dose of PCV13 and at least 1 dose of PPSV23 depending on your age and health condition.

Recommended For You: This vaccine is recommended for you ***unless*** your healthcare professional tells you that you cannot safely receive it or that you do not need it.

May Be Recommended For You: This vaccine is recommended for you if you have certain risk factors due to your health, job, or lifestyle that are not listed here. Talk to your healthcare professional to see if you need this vaccine.

If you are traveling outside the United States, you may need additional vaccines.
Ask your healthcare professional about which vaccines you may need at least 6 weeks before you travel.

For more information, call 1-800-CDC-INFO (1-800-232-4636) or visit www.cdc.gov/vaccines

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CS262412

Before you vaccinate adults, consider the "H-A-L-O"!

What is H-A-L-O? As shown below, it's an easy-to-use chart that can help you make an *initial* decision about vaccinating a patient based on four factors—the patient's **H**ealth condition, **A**ge, **L**ifestyle, and **O**ccupation. In some situations, though, you can vaccinate a patient without considering these factors. For example, all adults need a dose of Tdap as well as annual vaccination against influenza, and any adult who wants protection against hepatitis A or hepatitis B can be vaccinated. Note that not all patients who mention one or more **H-A-L-O** factors will need to be vaccinated. Before you make a *definitive* decision about vaccinating your patient, it's important that you refer to the more detailed information found in the Immunization Action Coalition's "Summary of Recommendations for Adult Immunization," located at www.immunize.org/catg.d/p2011.pdf or the complete vaccine recommendations of the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) at www.cdc.gov/vaccines/pubs/ACIP-list.htm.

How do I use H-A-L-O? Though some **H-A-L-O** factors can be easily determined (e.g., age, pregnancy), you will need to ask your patient about the presence or absence of others. Once you determine which of the factors apply, scan down each column of the chart to see at a glance which vaccinations are *possibly* indicated (they are shown with a check mark).

H-A-L-O checklist of factors that indicate a possible need for adult vaccination

Vaccine	Health factors									Age factors	Lifestyle factors							Occupational or other factors				
	Pregnant	Certain chronic diseases	Immunosuppressed (including HIV)	History of STD	Asplenia	Cochlear implant candidate/recipient	Organ transplant (for stem cell transplant, see ACIP's General Recommendations on Immunization)	CSF leaks	Alcoholism		Born outside the U.S.	Men who have sex with men	Not in a long-term, mutually monogamous relationship	User of injecting or non-injecting drugs	International traveler	Close contact of international adoptee	Cigarette smoker	College students	Parent or caregiver of a young child	Healthcare worker	Certain lab workers	Adults in institutional settings (e.g., chronic care, correctional)
HepA		✔										✔		✔	✔	✔					✔	
HepB		✔	✔	✔							✔	✔	✔	✔	✔					✔		✔
Hib		✔	✔		✔																	
HPV (females)										Through 26 yrs												
HPV (males)			✔							Routine through 21 yrs; risk-based 22–26 yrs		✔										
IPV															✔						✔	
Influenza	Annual vaccination is recommended for all adults ····►																					
Meningococcal		✔			✔										✔			✔			✔	
MMR			?							Routine 1 dose if born after 1956; 2nd dose for some					✔			✔		✔		
PCV13		✔	✔		✔	✔	✔	✔														
PPSV23		✔	✔		✔	✔	✔	✔	✔	65 yrs & older							✔					✔
Tdap	A single dose is recommended for all adults; pregnant women should receive Tdap during each pregnancy ····►																					
Varicella	Completion of a 2-dose series is recommended for non-pregnant adults through age 59 years who do not have evidence of immunity to varicella ····►																					
Zoster										60 yrs & older												

Sağlık Çalışanları Aşılaması

İnfeksiyon Riski Değerlendirmesi Yaptırınız…

- Duyarlı olduğunuz infeksiyonları saptayınız.
- Aşılama yaptırınız.
- Sağlık Çalışanları İnfeksiyon Kontrol Polikliniği

Tel: 5431

İyi Yapılandırılmış Sağlık Çalışanları Polikliniği

YENİ İŞE BAŞLAYANA AŞI KARTI HEDİYE ET!

Sağlık Personeli

- İnfluenza her yıl (ISRARLA!)
- KKK (KABAKULAK 2 DOZ)
- Suçiçeği
- Hepatit B
- Td (TdaP)

Risk faktörü varsa

  - Meningokok
  - Pnömokok
  - Hepatit A

Recommended adult immunization schedule-United States, 2010, January 2010
MMWR January 152010;59(1):Q1-Q4
CDC:MMWR 2011;60;7)

ÖZEL KONAK KİM ?

- **Hematopoetik Kök Hücre Nakil (HKHN)alıcıları**
- **Kanser hastaları ve immunsupresif tedavi** 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**

IDSA GUIDELINES

Clinical Infectious Diseases 2014;58(3):e44–100

2013 IDSA Clinical Practice Guideline for Vaccination of the Immunocompromised Host

Lorry G. Rubin,[1] Myron J. Levin,[2] Per Ljungman,[3,4] E. Graham Davies,[5] Robin Avery,[6] Marcie Tomblyn,[7] Athos Bousvaros,[8] Shireesha Dhanireddy,[9] Lillian Sung,[10] Harry Keyserling,[11] and Insoo Kang[12]

- KİM SORUMLU?
- NE ZAMAN?

  - İMMUNSUPRESYONDAN ÖNCE
  - İNAKTİF AŞILAR ≥2, CANLI AŞILAR≥4 HAFTA

- AİLE/YAKINLARININ AŞILANMASI
- SEYAHAT

Clinical Infectious Diseases Advance Access published December 4, 2013

IDSA GUIDELINES

«İmmünokompromize hastalarda aşılama önemlidir çünkü, bozulmuş konak savunması hastalarda aşıyla önlenebilir enfeksiyon şiddetinin ya da riskinin artışına zemin hazırlar.
Bu hastalar aynı zamanda tıbbi ortamlarla sık temas nedeniyle patojenlere karşı daha fazla maruz kalabilir; ancak, aşılama oranları düşüktür.
İmmünokompromize hastalarda eksik aşılama olabilir, çünkü klinisyenler bu tür hastaların aşılanması için güvenlik, etkinlik ve kontrendikasyonu ile ilgili yetersiz veya yanlış bilgiye sahipler.
Uzman klinisyenlerin kendi risk altındaki hasta popülasyonlarına aşı uygulamak için gerekli altyapısı olmayabilir»

Karolinska University Hospital; [5]Division of Hematology, Department of Medicine Huddinge, Karolinska Institutet, Stockholm, Sweden; [6]Department of Immunology, Great Ormond Street Hospital & Institute of Child Health, London, United Kingdom; [8]Division of Infectious Diseases, Johns Hopkins

«Aşıların güvenliği, immünojenisitesi, etkinliği / etkililiği ile ilgili veriler sınırlıdır.
Ön ruhsat çalışmalarında sıklıkla immün sistemi baskılanmış kişiler dışlanır, ruhsat sonrası çalışmalarında da az sayıda immünokompromize hasta irdelenir.
Advers etkiler değerlendirilirken bu az sayı problem yaratır.
Buna ek olarak, bu geniş başlık altında çok farklı gruplar olması, bulguların genellenebilirliğini sınırlayabilir»

tion are highlighted.

Keywords. vaccination; immunization; immunocompromised patients; immunosuppression; asplenic patients; immunodeficiency patients

Dermatoloji ve Romatoloji İmmunsupresif(Biyolojik Tedaviler) Kullanılan Hastalar

Immunomodulating agents

- Corticosteroids
- Methotrexate
- Sulfasalazine
- Leflunomide
- Hydroxychloroquine
- Azathioprine
- Mycophenolic acid preparations
- Cyclosporine
- Tacrolimus
- Cyclophosphamide
- Biologicals:
- TNFα blocking agents:
  - Infliximab
  - Etanercept
  - Adalimumab
- Rituximab
- Tocilizumab
- Abatacept
- Anakinra

RA
IBD
PSÖRİAZİS

Table 6. Vaccination of Persons With Chronic Inflammatory Diseases on Immunosuppressive Medications

Vaccine	Planned Immunosuppression: Recommendation	Planned Immunosuppression: Strength, Evidence Quality	Low-level Immunosuppression[a]: Recommendation	Low-level Immunosuppression[a]: Strength, Evidence Quality	High-level Immunosuppression[a]: Recommendation	High-level Immunosuppression[a]: Strength, Evidence Quality
Haemophilus influenzae b	U	Strong, moderate	U	Strong, low	U	Strong, low
diphtheria toxoid, and reduced acellular pertussis						
Human papillomavirus	U: 11–26 y	Strong, moderate	U: 11–26 y	Strong, low	U: 11–26 y	Strong, very low
Influenza-inactivated (inactivated influenza vaccine)	U	Strong, moderate	U	Strong, moderate	U	Strong, moderate
Influenza-live attenuated (live attenuated influenza vaccine)	X	Weak, very low	X	Weak, very low	X	Weak, very low
Measles, mumps, and rubella–live	U[b]	Strong, moderate	X	Weak, very low	X	Weak, very low
Measles, mumps, and rubella–varicella–live	U[b]	Strong, low	X	Weak, very low	X	Strong, very low
Meningococcal conjugate	U	Strong, moderate	U	Strong, moderate	U	Strong, low
Pneumococcal conjugate (PCV13)	R[c]	Strong, moderate	U: <6 y R: ≥6 y[c]	Strong, low strong, very low	U: <6 y R: ≥6 y[c]	Strong, low strong, very low
Pneumococcal polysaccharide (PPSV23)	R: age ≥2 y	Strong, low	R: age ≥2 y	Strong, low	R: age ≥2 y	Strong, very low
Polio-inactivated (inactivated poliovirus vaccine)	U	Strong, moderate	U	Strong, moderate	U	Strong, low
Rotavirus–live	U	Strong, moderate	X	Weak, very low	X	Weak, very low
Varicella–live	U[b]	Strong, moderate	X[d]	Weak, very low	X	Strong, moderate
Zoster–live	R: age 50–59 y[e] U: age ≥60 y	Weak, low strong, low	R: age 50–59 y[e] U: age ≥60 y	Weak, very low Strong, very low	X	Weak, very low

Düşük immunsupresyon: prednizon 2mg/kg-max 20mg/kg
MTX≤ 0.4mg/kg/hf, azathioprin ≤3mg/kg/gün; 6 Merkaptopurin ≤ 1,5mg/kg/gün
Yüksek düzey immunsupresyon biyolojik ajanlar ör: TNF antagonistleri veya rituximab

Abbreviations: R, recommended—administer if not previously administered or not current; such patients may be at increased risk for this vaccine-preventable infection; U, usual—administer if patient not current with

[a] Low-level immunosuppression includes treatment with prednisone <2 mg/kg with a maximum of ≤20 mg/day; methotrexate ≤0.4 mg/kg/week; azathioprine ≤3 mg/kg/day; or 6-mercaptopurine ≤1.5 mg/kg/day. High-level immunosuppression regimens include treatment with doses higher than those listed for low-dose immunosuppression and biologic agents such as tumor necrosis factor antagonists or rituximab.

[c] For patients aged ≥19 years who have received PPSV23, PCV13 should be administered after an interval of ≥1 year after the last PPSV23 dose (weak, low).

[d] Administration of varicella vaccine can be considered for nonvaricella-immune patients treated for chronic inflammatory disease who are receiving long-term low-dose immunosuppression (weak, very low). This recommendation deviates from recommendations of the Advisory Committee on Immunization Practices, Centers for Disease Control and Prevention.

[e] This recommendation deviates from recommendations of the Advisory Committee on Immunization Practices, Centers for Disease Control and Prevention [10].

AŞI İLE ÖNLENEBİLİR HASTALIKLARIN YÜKÜ

Pnömoniden 3–4 milyon ölüm

Pnömokokal hastalıkların neden olduğu yaklaşık 700,000 ölüm 2015 itibari ile önlenebilir

İnfluenza her yıl 500 milyon kişiyi enfekte ediyor.

3-5 milyon şiddetli olgu, 250-500.000 ölüm

İnfluenza'nın neden olduğu hastalıklar ve komplikasyonlar %60'a kadar ve yaşlı hastalarda ölümler %80 kadar azaltılabilir

Lynch JP, Zhanel GG.Semin Resp Crit Care Med 2009:30:189-209
Brundage JF. Lancet Infect Dis 2006:6:303-12
Ludwig E. Eur Respir Rev. 212:21:123:57-65

Contents lists available at SciVerse ScienceDirect

Vaccine

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

Influenza vaccination in Turkey: Prevalence of risk groups, current vaccination status, factors influencing vaccine uptake and steps taken to increase vaccination rate

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ARTICLE INFO

Article history:
Received 10 July 2012
Received in revised form 3 November 2012
Accepted 6 November 2012
Available online 19 November 2012

Keywords:
Influenza
Risk groups
Vaccination
Turkey

ABSTRACT

Influenza infections cause considerable morbidity and mortality not only during the pandemics but also during annual epidemics. Vaccines are the most effective tools for preventing the infection. Although World Health Organization (WHO) and Ministry of Health (MoH) recommends vaccination for people at increased risk, sales data indicate that vaccination rate remains low in Turkey. Vaccine recommended groups are well defined and reimbursed in Turkey. However, the prevalence of people in risk groups, current vaccination rates and factors influencing vaccine uptake which are essential in order to develop and sustain effective strategies to increase vaccination rate are not documented. A thorough literature review was performed to determine the estimated number of people in risk groups, vaccination rates, factors influencing vaccine uptake in Turkey. Actions taken by the health authorities in order to increase the vaccine uptake among specified risk groups are also summarized. Based on the published prevalence rates, current study calculated that there are approximately 27 to 33 million people in risk groups. In addition, there are 428,000 health care providers serving in the public sector who are at increased risk for influenza infections. The lowest reported vaccination rate (5.9%) was in the elderly ≥65 years of age and the highest (27.3%) in patients with COPD. Finally, survey results indicated that leading factor negatively influencing vaccine uptake was disbelief in the effectiveness of vaccine. In order to increase vaccination coverage, vaccines are provided to health care providers free of charge and reimbursed for those in the risk groups. Realizing the fact that combating flu requires multidisciplinary collaboration, a stakeholder network, Grip Platformu, has been established in 2011 with the endorsement of the MoH to increase influenza awareness and vaccine coverage rates among risk groups in accordance with WHO recommendations.

TÜRKİYE İSTATİSTİK ENSTİTÜSÜ: ARALIK 31, 2009: 72.561.312

2015: %10-11 > 65 Yaş

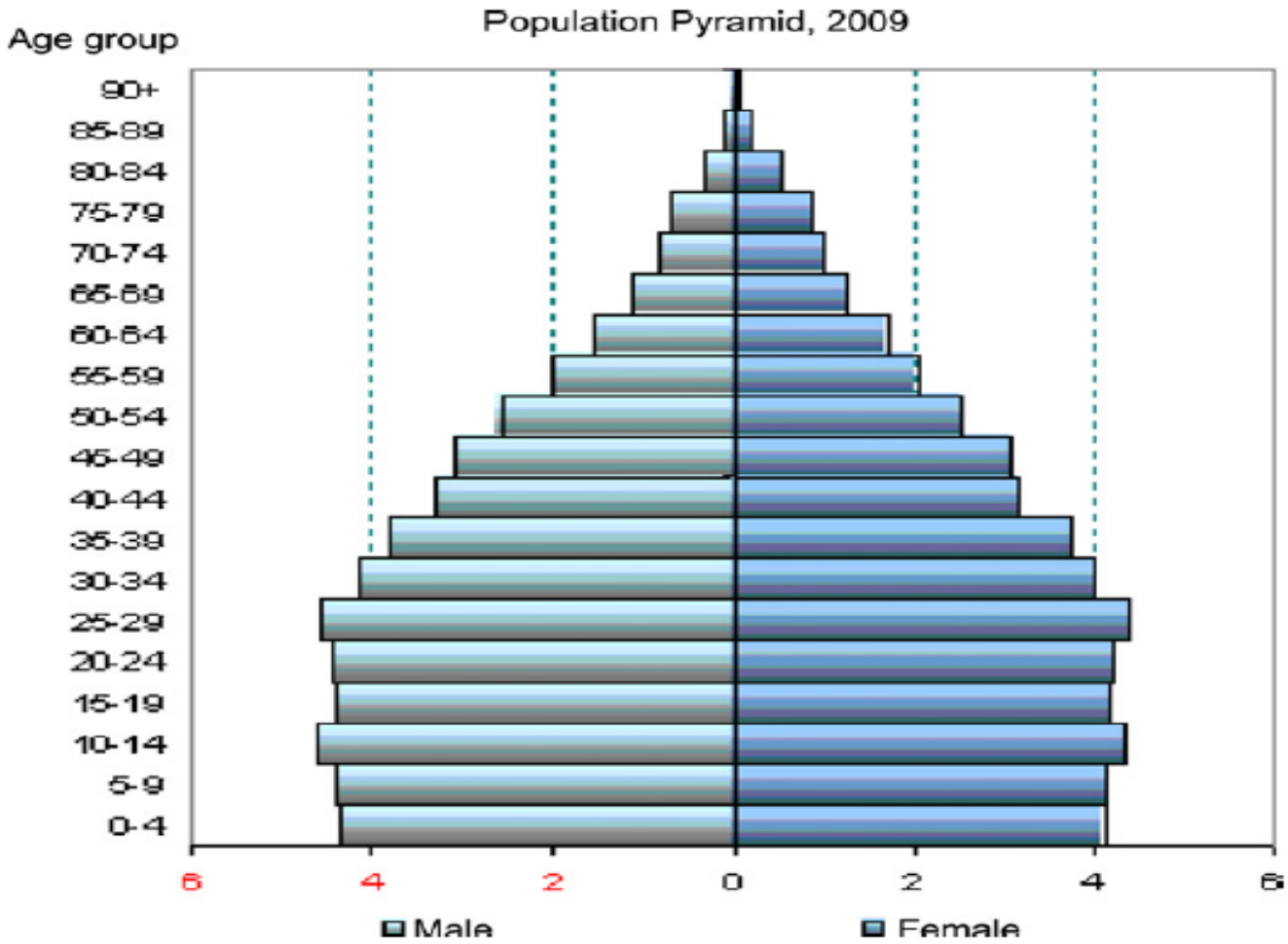


Fig. 1. Population pyramid in Turkey, 2009 [9]. The proportion of the population in the 65 and over age group is 7%.

Türkiye’de Risk Faktörleri

YAŞ	POPÜLASYON	KOAH	ASTIM	DİYABET	KRONİK BÖBREK HASTALIĞI	KRONİK KALP YETERSİZLİĞİ	KANSER	HIV	KOKLEAR IMPLANT	ORGAN TRANSPLANT
18-29	15.198.195		553.214	419.757	284.085		30.396	4.686	5.000	10.127
30-39	12.380.736		450.659	341.942	231.421	123.807	86.665			
40-49	10.629.270	507.548	386.905	980.689	294.518	106.293	127.551			
50-64	11.411.906	544.919	415.393	1.042.368	572.252	570.595	136.943			
65 +	6.594.955	314.909	240.056	1.348.704	474.239	659.495	211.039			
18-64 YAŞ KOMORBİD HASTALIK	8.227.735	1.052.466	1.806.172	2.784.756	1.382.276	800.695	381.556	4.686	5.000	10.127
65 YAŞ ÜZERİ	6.594.955									
TOPLAM	14.822.689									

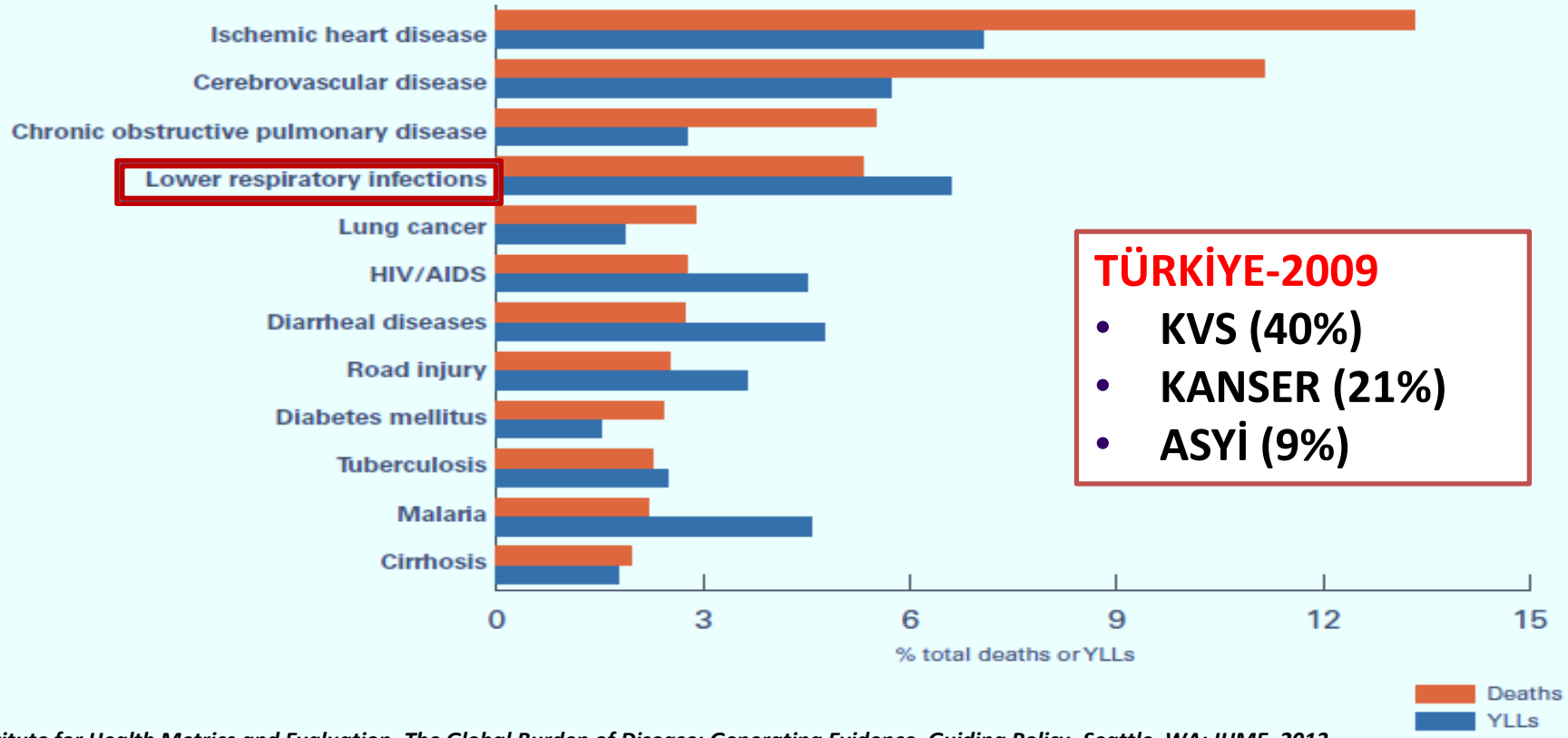
1. Türkiye Diyabet Prevalans Çalışmaları: TURDEP-I ve TURDEP-II http://diyabet.gov.tr/content/files/bilimsel_arastirmalar/turdep_1_turdep_2.pdf
2. Kronik Obstrüktif Akciğer Hastalığı Epidemiyolojisi ve Risk Faktörleri http://www.toraks.org.tr/uploadFiles/book/file/2422011175353-105113.pdf
3 Ulusal Kalp Sağlığı Politikası http://www.tkd-online.org/UKSP/UKSP_Bolum02.pdf
4. Türkiye'de Alerjilerin Prevalansı ve Risk Faktörleri (PARFAIT): Yetişkinlerde Yapılan Çok Merkezli Kesitsel Bir Çalışmanın Sonuçları http://www.toraks.org.tr/uploadFiles/book/file/242201111535-8390.pdf
5. Türkiye'de diyabet ve kronik böbrek hastalığı: CREDIT çalışması http://www.tsn.org.tr/folders/file/hekimlik/salon2/Kenan_Ates.pdf
6. Türkiye'de kanser kayıtçılığı http://www.kanser.gov.tr/daire-faaliyetleri/kanser-kayitciligi/108-t%C3%BCrkiyede-kanser-kayitcigi.html
7. www.tuik.gov.tr/PreIstatistikTablo.do?istab_id=94

The Global Burden of Disease: Generating Evidence Guiding Policy

Institute For Health Metrics And Evaluation & University of Washington

This report was prepared by the Institute for Health Metrics and Evaluation (IHME) based on seven papers for the Global Burden of Disease Study 2010 (GBD 2010) published in The Lancet (2012 Dec 13; 380). GBD 2010 had 488 co-authors from 303 institutions in 50 countries. The work was made possible through core funding from the Bill & Melinda Gates Foundation. The views expressed are those of the authors.

Figure 2: Leading causes of global death and premature death, 2010



TÜRKİYE-2009

- **KVS (40%)**
- **KANSER (21%)**
- **ASYİ (9%)**

Institute for Health Metrics and Evaluation. The Global Burden of Disease: Generating Evidence, Guiding Policy. Seattle, WA: IHME, 2013

ERİŞKİN BAĞIŞIKLAMADA HEDEF: HEALTHY PEOPLE 2010 / 2020 - CDC

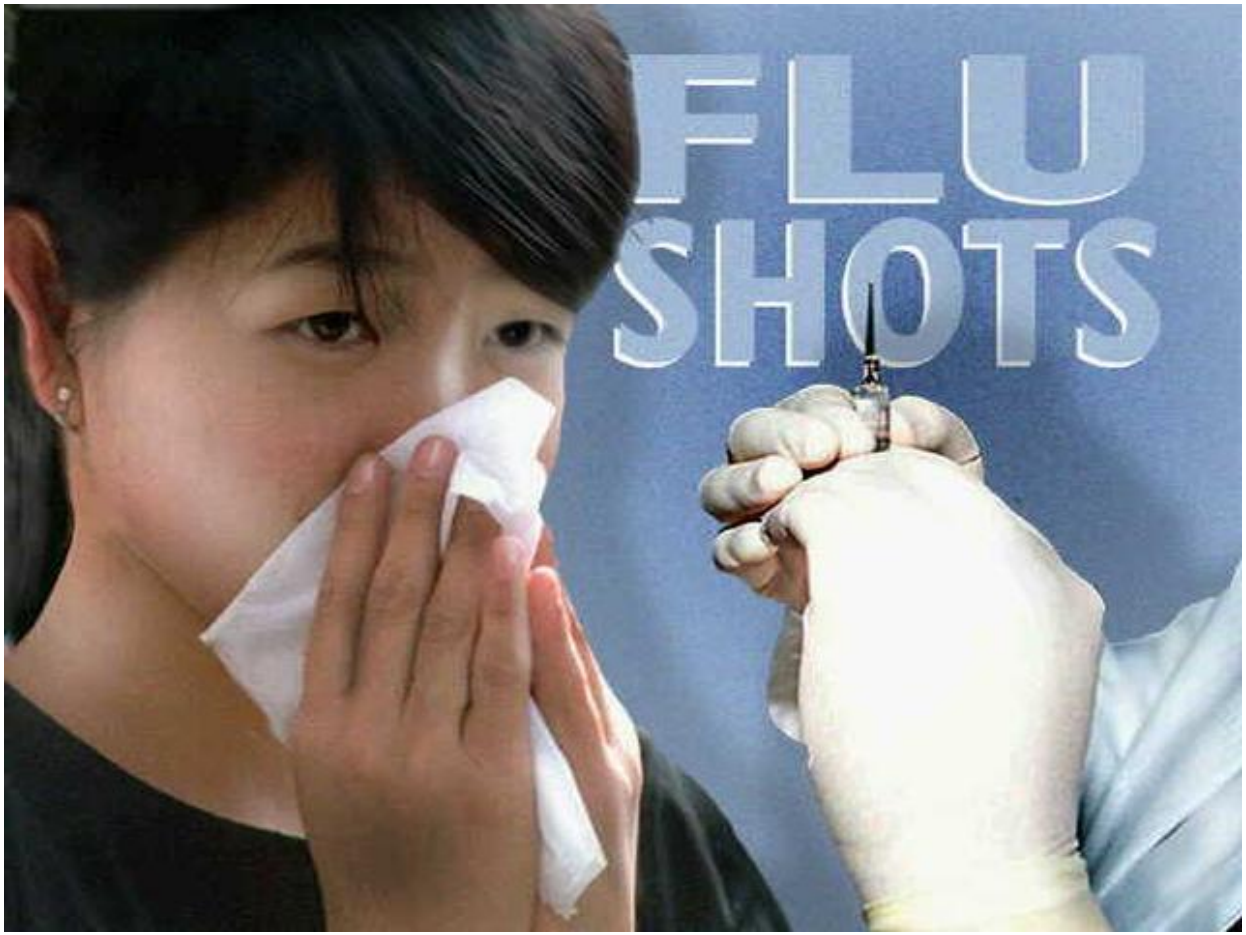
ELİMİNASYON;
Difteri, KKK, Tetanoz

%75 AZALTMA;
Hepatit A ve B

Kanada, ABD;
İnfluenza%30-40

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

GRİP AŞISI



DSÖ İNFLUENZA AŞI ÖNERİSİ

- Yüksek öncelik

  Gebeler
- Öncelik
  - 6-59 ay çocuklar
  - Yaşlı
  - Kronik hastalık
  - Sağlık Çalışanları

İnfluenza Aşıları

- İki influenza A virüsünün hemaglütinin ve nörominidaz antijenleri ve influenza B antijeni içeren inaktif aşılar kullanılmaktadır
- Trivalan aşıda influenza B Victoria veya Yamagata suşuna ait bir antijen bulunur
- Yaşlı ve immünsüpresif hastalarda aşı etkinliğinin çocuk ve genç erişkine oranla daha az olması da başka bir sorundur.

Aşı Yaptırmama nNdenleri

- **Domuz gribi aşısı ilk olarak ve sadece Türkiye'de kullanılacak, kobay olarak üzerimizde denenecek**
- **Aşıdaki squalen maddesi ilk defa deneniyor**
- **Aşıdaki civa kanser yapıyor-öldürüyor**
- **Aşıların hiçbirinin onayı yok**
- **Aşı felç yapıyor sinir hastalıkları yapıyor**
- **Aşı Guillain Barre yapıyor**
- **Hastalık zaten çok hafif geçiriliyor**
- **Bana bir şey olmaz**
- **Aşı uzun vadede zararlı**
- **Virüs mutasyona uğrarsa zaten bu aşı işe yaramıyacak**
- **Bunun arkasında başka ülkeler var !**
- **Bu iş aşı firmalarının başının altından çıktı**
- **Neden "x" aşısı değil de "y" aşısı alındı ……**

ABD'DE ONAYLI MEVSİMSEL İNFLUENZA AŞILARI

Morbidity and Mortality Weekly Report

TABLE. Influenza vaccines — United States, 2015–16 influenza season*

Trade name	Manufacturer	Presentation	Mercury (from thimerosal) µg/0.5 mL	Ovalbumin µg/0.5 mL	Age indications	Latex	Route
Inactivated influenza vaccine, quadrivalent (IIV4), standard dose							
Contraindications: Severe allergic reaction to any vaccine component, including egg protein, or after previous dose of any influenza vaccine.*							
Precautions: Moderate to severe acute illness with or without fever; history of Guillain-Barré syndrome within 6 weeks of receipt of influenza vaccine.*							
Fluarix Quadrivalent	GlaxoSmithKline	0.5 mL single-dose prefilled syringe	—	≤0.05	≥3 yrs	No	IM†
FluLaval Quadrivalent	ID Biomedical Corp. of Quebec (distributed by GlaxoSmithKline)	5.0 mL multi-dose vial	<25	≤0.3	≥3 yrs	No	IM†
Fluzone Quadrivalent	Sanofi Pasteur	0.25 mL single-dose prefilled syringe	—	§	6 through 35 mos	No	IM†
		0.5 mL single-dose prefilled syringe	—	§	≥36 mos	No	IM†
		0.5 mL single-dose vial	—	§	≥36 mos	No	IM†
		5.0 mL multi-dose vial	25	§	≥6 mos	No	IM†
Fluzone Intradermal¶ Quadrivalent	Sanofi Pasteur	0.1 mL single-dose prefilled microinjection system	—	§	18 through 64 yrs	No	ID**
Inactivated influenza vaccine, trivalent (IIV3), standard dose							
Contraindications: Severe allergic reaction to any vaccine component, including egg protein, or after previous dose of any influenza vaccine.*							
Precautions: Moderate to severe acute illness with or without fever; history of Guillain-Barré syndrome within 6 weeks of receipt of influenza vaccine.*							
Afluria	bioCSL	0.5 mL single-dose prefilled syringe	—	<1	≥9 yrs††	No	IM†
		5.0 mL multi-dose vial	24.5	<1	≥9 yrs†† via needle;18 through 64 yrs via jet injector	No	IM†
Fluvirin	Novartis Vaccines and Diagnostics	0.5 mL single-dose prefilled syringe	≤1	≤1	≥4 yrs	Yes§§	IM†
		5.0 mL multi-dose vial	25	≤1	≥4 yrs	No	IM†
Fluzone	Sanofi Pasteur	5.0 mL multi-dose vial	25	§	≥6 mos	No	IM†

Aşı kimlere uygulanmamalıdır?

- Yumurta, tavuk proteini veya aşının herhangi bir bileşenine karşı aşırı duyarlılığı olduğu bilinen kişiler
- 6 aydan küçük çocuklar
- Daha önceden aşıyla ilgili nörolojik yan etki gelişenler (Guillain-Barre Sendromu)
- Ateşli bir hastalık veya akut bir enfeksiyon hastalığı durumunda aşılanmanın ertelenmesi tavsiye edilir
- Hamileliğinin ilk 3 ayı içindeki bayanlar (doktor tarafından gerekli görülürse olabilirler)

Yeni İnfluenza Aşıları

- İnfluenza B virüslerine karşı tam kapsayıcılık:

  Tetravalan influenza aşısı iki influenza B antijeni (Victoria ve Yamagata) içermektedir
- Etkinliğin düşük olduğu gruplar için yüksek doz

FLUZONE
60 mcg of hemaglutinin içeriyor
Standart doz 15 mcg

Comparative effectiveness of high-dose versus standard-dose influenza vaccines in US residents aged 65 years and older from 2012 to 2013 using Medicare data: a retrospective cohort analysis

Hector S Izurieta*, Nicole Thadani*, David K Shay, Yunlu, Aaron Maurer, Ivo M Foppa, Riley Franks, Douglas Pratt, Richard A Forshee, Thomas Matthews, Chris Worrall, Andrew E Howery, Jeffrey Kelman

Summary

Background A high-dose trivalent inactivated influenza vaccine was licensed in 2009 by the US Food and Drug Administration (FDA) on the basis of serological criteria. We sought to establish whether high-dose inactivated influenza vaccine was more effective for prevention of influenza-related visits and hospital admissions in US Medicare beneficiaries than was standard-dose inactivated influenza vaccine.

Methods In this retrospective cohort study, we identified Medicare beneficiaries aged 65 years and older who received high-dose or standard-dose inactivated influenza vaccines from community pharmacies that offered both vaccines during the 2012–13 influenza season. Outcomes were defined with billing codes on Medicare claims. The primary outcome was probable influenza infection, defined by receipt of a rapid influenza test followed by dispensing of the neuraminidase inhibitor oseltamivir. The secondary outcome was a hospital or emergency department visit, listing a Medicare billing code for influenza. We estimated relative vaccine effectiveness by comparing outcome rates in Medicare beneficiaries during periods of high influenza circulation. Univariate and multivariate Poisson regression models were used for analyses.

Findings Between Aug 1, 2012 and Jan 31, 2013, we studied 929 730 recipients of high-dose vaccine and 1 615 545 recipients of standard-dose vaccine. Participants enrolled in each cohort were well balanced with respect to age and presence of underlying medical disorders. The high-dose vaccine (1·30 outcomes per 10 000 person-weeks) was 22% (95% CI 15–29) more effective than the standard-dose vaccine (1·01 outcomes per 10 000 person-weeks) for prevention of probable influenza infections (rapid influenza test followed by oseltamivir treatment) and 22% (95% CI 16–27%) more effective for prevention of influenza hospital admissions (0·86 outcomes per 10 000 person-weeks in the high-dose cohort *vs* 1·10 outcomes per 10 000 person-weeks in the standard-dose cohort).

Interpretation Our retrospective cohort study in US Medicare beneficiaries shows that, in people 65 years of age and older, high-dose inactivated influenza vaccine was significantly more effective than standard-dose vaccine in prevention of influenza-related medical encounters. Additionally, the large population in our study enabled us to show, for the first time, a significant reduction in influenza-related hospital admissions in high-dose compared to standard-dose vaccine recipients, an outcome not shown in randomised studies. These results provide important new information to be considered by policy makers recommending influenza vaccinations for elderly people.

Funding FDA and the office of the Assistant Secretary of Planning and Evaluation.

Lancet Infect Dis 2015; 15: 293–300

Published Online February 9, 2015 http://dx.doi.org/10.1016/S1473-3099(14)71087-4

See Comment page 253

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Introduction

Elderly people are at an increased risk of severe influenza-related complications compared with young people.[1,2] People aged 65 years and older account for more than 90% of all influenza deaths.[3] Despite this serious public health burden, only one large randomised placebo-controlled trial of the efficacy of an inactivated influenza vaccine in elderly people has been done.[4–6] That study[4] showed an efficacy of 58% (95% CI 26–77) for the prevention of symptomatic clinical illness associated with laboratory-confirmed influenza illness in participants aged 60 years and older; in those aged 60–69 years, vaccine efficacy was 59% (20 to 79), whereas in participants aged 70 years and older, it was 57% (−36 to 87). Thus, most information about the effects of the influenza vaccine in people aged 65 years and older is based on observational studies. In these studies,[7–9] estimates of effectiveness of standard-dose inactivated influenza vaccines in the prevention of serious influenza-associated outcomes in people aged 65 years and older have varied widely, suggesting moderate to no effectiveness. Identification of ways to improve the clinical effects of influenza vaccination to reduce influenza disease and its complications in people aged 65 years and older is a public health priority. Researchers have been exploring new vaccines that might increase effectiveness in elderly people.[10]

In December, 2009, the US Food and Drug Administration (FDA) licensed an injectable inactivated

Yeni İnfluenza Aşıları

- Yumurta proteinine allerji

•Hücre kültürü aşıları
Memeli hücre kökenli inaktif aşı (Flucelvax)

•Rekombinant hemaglutinin aşısı —
Baculovirus ekspresyonu (Flublok)

Her iki aşının etkinliği yumurtada hazırlanan aşı gibi

ABD'DE ONAYLI MEVSİMSEL İNFLUENZA AŞILARI

Inactivated influenza vaccine, cell-culture-based (ccIIV3), standard dose

Contraindications: Severe allergic reaction to any vaccine component, including egg protein, or after previous dose of any influenza vaccine.*
Precautions: Moderate to severe acute illness with or without fever; history of Guillain-Barré syndrome within 6 weeks of receipt of influenza vaccine.*

Flucelvax	Novartis Vaccines and Diagnostics	0.5 mL single-dose prefilled syringe	—	¶¶	≥18 yrs	Yes§§	IM†

Inactivated influenza vaccine, trivalent (IIV3), high dose

Contraindications: Severe allergic reaction to any vaccine component, including egg protein, or after previous dose of any influenza vaccine.*
Precautions: Moderate to severe acute illness with or without fever; history of Guillain-Barré syndrome within 6 weeks of receipt of influenza vaccine.*

Fluzone High-Dose***	Sanofi Pasteur	0.5 mL single-dose prefilled syringe	—	§	≥65 yrs	No	IM†

Recombinant influenza vaccine, trivalent (RIV3), standard dose

Contraindications: Severe allergic reaction to any vaccine component.*
Precautions: Moderate to severe acute illness with or without fever; history of Guillain-Barré syndrome within 6 weeks of receipt of influenza vaccine.*

Flublok	Protein Sciences	0.5 mL single-dose vial	—	0	≥18 yrs	No	IM†

Live attenuated influenza vaccine, quadrivalent (LAIV4)

Contraindications: Severe allergic reaction to any vaccine component, including egg protein, or after previous dose of any influenza vaccine. Concomitant use of aspirin or aspirin-containing medications in children and adolescents.*
In addition, ACIP recommends LAIV4 not be used for pregnant women, immunosuppressed persons, persons with egg allergy, and children aged 2 through 4 years who have asthma or who have had a wheezing episode noted in the medical record within the past 12 months, or for whom parents report that a health care provider stated that they had wheezing or asthma within the last 12 months.
LAIV4 should not be administered to persons who have taken influenza antiviral medications within the previous 48 hours.
Persons who care for severely immunosuppressed persons who require a protective environment should not receive LAIV4, or should avoid contact with such persons for 7 days after receipt.
Precautions: Moderate to severe acute illness with or without fever; history of Guillain-Barré syndrome within 6 weeks of receipt of influenza vaccine; asthma in persons aged 5 years and older; medical conditions which might predispose to higher risk for complications attributable to influenza.*

FluMist Quadrivalent†††	MedImmune	0.2 mL single-dose prefilled intranasal sprayer	—	<0.24 (per 0.2 mL)	2 through 49 yrs	No	IN

Pnömokok Aşıları

Polisakkarid Pnömokok Aşısı (PPA23)
İnvaziv hastalığa en sık neden olan 23 pnömokok antijenini içerir: 5-64 yaş ; risk faktörleri
2010: >65 yaş

13 değerli konjuge pnömokok (KPA13) aşısı etkinliği daha yüksek bir aşıdır:
2010:2 ay-5 yaş
2011: >50 yaş FDA ONAY: pnömoni ve IPD
2012:>19 yaş, immunsupresyon,BOS kaçağı,aspleni,kohlear implant
2014: PPSV 23 ile >65 yaş

The Influence of Chronic Illnesses on the Incidence of Invasive Pneumococcal Disease in Adults

Moe H. Kyaw,[1] Charles E. Rose, Jr.,[1,a] Alicia M. Fry,[1,a] James A. Singleton,[2] Zack Moore,[1,a] Elizabeth R. Zell,[1] and Cynthia G. Whitney,[1] for the Active Bacterial Core Surveillance Program of the Emerging Infections Program Network[b]

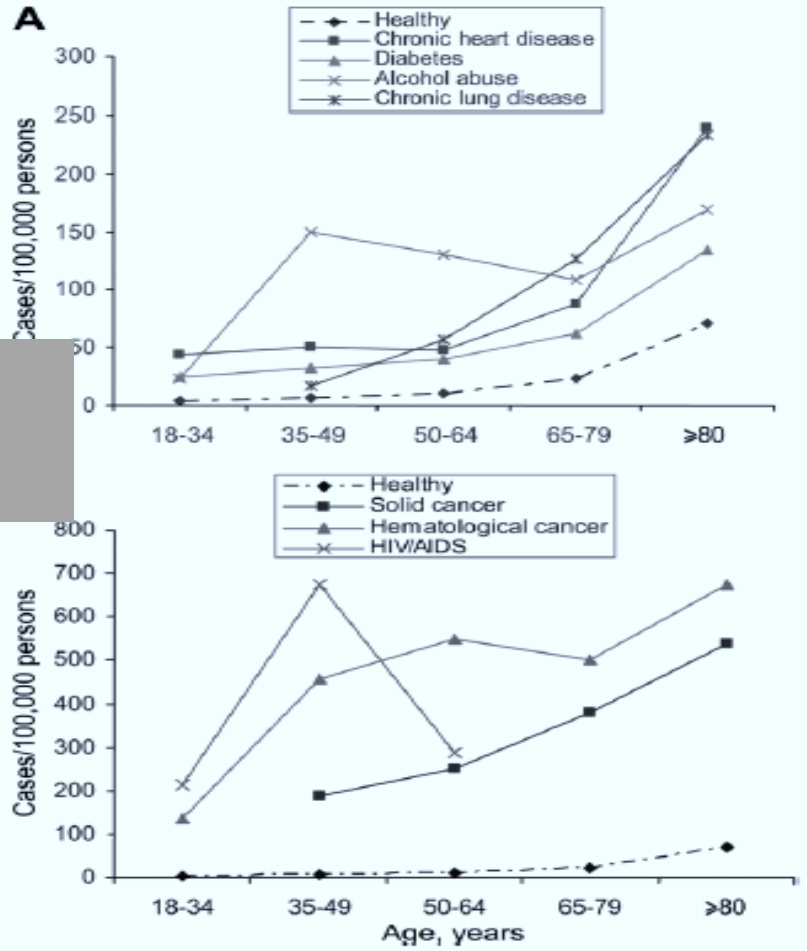

Figure 1. Age-specific incidence of invasive pneumococcal disease in healthy adults (≥18 years old) vs. adults with chronic illnesses *(A)* and adults with immunocompromising conditions *(B)*—United States, 1999–2000. Rates in adults ≥65 years old with HIV/AIDS and in adults 18–34 years old with chronic heart disease, chronic lung disease, and solid cancer were not calculated, because of insufficient numbers.

DM:51.4
KOAH:62.9
KAH:93.7
ALKOL:100

Age, years	Cases, rate*
18–49	16
50–64	21.2
≥65	38.7

Toplam bakteremik pnömoni olgular : 2.932(70.4%)kültürle konfirme

Centers for Disease Control and Prevention Center. ABCs report *Streptococcus pneumoniae*, 2009.(cited 2010 December)- http://www.cdc.gov/abcs/index.htm

YÜKSEK RİSKLİ DURUMLAR

- İmmunsupresyon
- Aspleni (fonksiyonel veya anatomik)
- Kronik kalp, pulmoner, karaciğer veya böbrek hastalıkları ,Diyabet
- Sigara içimi,alkol
- Serebrospinal sıvı (BOS) kaçakları
- Kohlear implant

PNÖMOKOK AŞI ENDİKASYONLARI;CDC-Ekim 2012

Indications for administration of PPV23 and PCV13 in adults aged 19 to 64 years

Risk Group	Medical Condition	PCV13	PPV23	PPV23 Revax[a]
Presumed Immunocompetent	Asplenia (including hemoglobinopathies)	X	X	X
	CSF leaks	X	X	—
	Cochlear implant	X	X	—
	Chronic heart disease	—	X	—
	Cigarette smoking	—	X	—
	Chronic lung disease	—	X	—
	Diabetes	—	X	—
	Alcoholism	—	X	—
	Chronic liver disease	—	X	—
Immunocompromised	Congenital or acquired immunodeficiencies	X	X	X
	HIV infection	X	X	X
	Chronic renal failure	X	X	X
	Nephrotic syndrome	X	X	X
	Leukemia	X	X	X
	Lymphoma	X	X	X
	Hodgkin disease	X	X	X
	Generalized malignancy	X	X	X
	Iatrogenic immunosuppression	X	X	X
	Solid organ transplant	X	X	X
	Multiple myeloma	X	X	X

Önce PCV13
8 hf.sonra
PPSV23

İlk doz
PPSV23
1 yıl sonra
PCV13

[a] Single revaccination 5 years after a prior vaccination.

Acute pneumonia and the cardiovascular system

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Lancet 2013; 381: 496–505
Published Online January 16, 2012 http://dx.doi.org/10.1016/S0140-6736(12)61266-5

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Although traditionally regarded as a disease confined to the lungs, acute pneumonia has important effects 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[39,48,49]
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;[41,58,60] 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

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

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(See the articles by Janjua et al, on pages 1017–1027, and by Liu et al, on pages 1028–1032.)

Background. Despite World Health Organization recommendations, the rate of 23-valent pneumococcal (PPV) and influenza (TIV) vaccination among elderly persons in Hong Kong, China, is exceptionally low because of doubts about effectiveness of vaccination. The efficacy of dual vaccination remains unknown.

Methods. From 3 December 2007 to 30 June 2008, we conducted a prospective cohort study by recruiting outpatients aged ≥65 years with chronic illness to participate in a PPV and TIV vaccination program. All were observed until 31 March 2009. The outcome of subjects, including the rates of death, hospitalization, pneumonia, ischemic stroke, acute myocardial infarction, and coronary and intensive care admissions, were determined.

Results. Of the 36,636 subjects recruited, 7393 [illegible] 1875 received PPV alone, and 25[illegible] Baseline characteristics [illegible] PPV and TIV gro[illegible] persons. At wee[illegible] [HR], 0.65; 95% [illegible] 0.51–0.64; $P<.001$), is[illegible] 0.52; 95% CI, 0.38–0.71; P[illegible] coronary (HR, 0.59; 95% CI, 0.44–0.79; P[illegible] $P=.03$), compared with among unvaccinated subjects.

Conclusions. Dual vaccination with PPV and TIV is effective in protecting elderly persons with chronic illness from developing complications from respiratory, cardiovascular, and cerebrovascular diseases, thereby reducing hospitalization, coronary or intensive care admissions, and death.

Pnömokok aşısı ile birlikte uygulama

Pneumococcal and influenza infections can cause serious morbidity and mortality, especially in the elderly population. In Hong Kong, overcrowded living conditions facilitate the transmission of both influenza and pneumococcal infection. Although a 23-valent pneumococcal polysaccharide vaccine (PPV) and a trivalent influenza vaccine (TIV) are available for prevention of pneumococcal and influenza infection respectively, the worldwide rates of uptake of these vaccines have been limited and variable [1–4]. There has been conflicting evidence on whether receipt of PPV can reduce the risk of community-acquired pneumonia and death among elderly persons, defined as those aged ≥65 years in most

Received 20 April 2010; accepted 23 July 2010; electronically published 1 October 2010.

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Clinical Infectious Diseases 2010;51(9):1007–1016

1058-4838/2010/5109-0003$15.00
DOI: 10.1086/656587

PPV and TIV Prevent AMI and Stroke in the Elderly CID 2010:51 (1 November)

- 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 a (1 yıl) kadar izlenmiş
- Toplam 36,636 kişi
- İki aşı verilen 7292
- İnfluenza aşısı tek başına 2076 kişi
- PPA23 tek başına 1875 kişi
- Aşılanmayan 25,393 kişi

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

≥65yaş 85000 erişkinde Hollanda'da yapılan randomize plasebo kontrollu CAPITA çalışması

Aşı içeriğindeki pnömokok tiplerinin neden olduğu pnömoni ve invaziv hastalığa karşı korunma

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

- ***CAPiTA ÇALIŞMASI. N Engl J Med 372:12:March 2015***

Clinical Infectious Diseases

MAJOR ARTICLE

Clinical Infectious Diseases® 2016;62(2):139–47

Invasive Pneumococcal Disease Among Immunocompromised Persons: Implications for Vaccination Programs

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(See the Editorial Commentary by Lujan and Gallego on pages 148–9.)

Background. In 2012/2013, a single dose of 13-valent pneumococcal conjugate vaccine (PCV13) was recommended for immunocompromised adults in the United States and Canada. To assess the potential benefits of this recommendation, we assessed the serotype-specific burden of invasive pneumococcal disease (IPD) among immunocompromised individuals.

Methods. From 1995 to 2012, population-based surveillance for IPD was conducted in Metropolitan Toronto and Peel Region, Canada. Disease incidence and case fatality were measured in immunocompromised populations over time, and the contribution of different serotypes determined.

Results. Overall, 2115/7604 (28%) episodes of IPD occurred in immunocompromised persons. IPD incidence was 12-fold higher (95% confidence interval [CI], 8.7–15) in immunocompromised compared to immunocompetent persons; the case fatality rate was elevated in both younger (odds ratio [OR] 1.8) and older (OR 1.3) adults. Use of immunosuppressive medications was associated with a 2.1–2.7 fold increase in the risk of IPD. Five years after PPV23 program implementation, IPD incidence had declined significantly in immunocompromised adults (IRR 0.57, 95% CI, .40–.82). Ten years after pediatric PCV7 authorization, IPD due to PCV7 serotypes had decreased by 90% (95% CI, 77%–96%) in immunocompromised persons of all ages. In 2011/2012, 37% of isolates causing IPD in immunocompromised persons were PCV13 serotypes and 27% were PPV23/not PCV13 serotypes.

Conclusions. Immunocompromised individuals comprised 28% of IPD. Both PPV23 and herd immunity from pediatric PCV7 were associated with reductions in IPD in immunocompromised populations. PCV13 vaccination of immunocompromised adults may substantially reduce the residual burden until herd immunity from pediatric PCV13 is fully established.

Erişkinlerde pnömokok aşısına ilişkin ACIP önerileri[1,2]

		Başlangıç dozu	İlave dozlar
≥65 yaş erişkinlerin tümü	**Daha önce pnömokok aşısı yapılmamış***	**1 doz KPA13****	**1 doz PPA23†** (KPA13 dozundan 1 yıl sonra)
	≥65 yaşında PPA23 ile aşılanmış	**1 doz KPA13** (en son PPA23 dozundan en az 1 yıl sonra)	
	65 yaşından önce PPA23 ile aşılanmış ancak şu an ≥65 yaşında olanlar	**1 doz KPA13** (en son PPA23 dozundan en az 1 yıl sonra)	**1 doz PPA23†** (en son PPA23 dozundan ≥5 yıl sonra)
≥19 yaş immün sistemi zayıflamış kişiler	**Daha önce pnömokok aşısı yapılmamış**	**1 doz KPA13**	**1 doz PPA23‡** (KPA13 dozundan ≥8 hafta sonra)
	Daha önce aşılanmış (PPA23)	**1 doz KPA13** **(en son PPA23 dozundan en az 1 yıl sonra)**	**1 doz PPA23‡** **(KPA13 dozundan ≥8 hafta sonra ve en son PPA23 dozundan ≥5 yıl sonra)**

*Pnömokok aşısı yapılmamış veya aşı öyküsü bilinmeyen hastalar. **13 valan konjüge pnömokok aşısı. †İki aşı (Prevenar 13*** ve PPA23) eş zamanlı yapılmamalıdır. ‡İki aşı arasında (Prevenar 13 ve PPA23) minimum 8 hafta olmalıdır; bu zaman aralığının yakalanamaması durumunda, PPA23 Prevenar 13®'ten 6-12 ay sonra da yapılabilir. KPA13, pnömokok polisakkarid konjüge aşıdır (13 valanlı, adsorbe). Ayrıntılı bilgi için bkz. yerel KÜB ve resmi öneriler.

ACIP, Aşı Uygulamaları Danışma Kurulu; KPA, konjüge pnömokok aşısı; PPA23, polisakkarid pnömokok aşısı; PPA23; 23 valan PPA23.

1. Kobayashi M et al. MMWR . 2015; 64(34)

2. Centers for Disease Control and Prevention. MMWR Morb Mortal Wkly Rep 2012;61:816–19.

ACIP 2015 Eylül

Morbidity and Mortality Weekly Report

Intervals Between PCV13 and PPSV23 Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP)

Miwako Kobayashi, MD[1,2]; Nancy M Bennett, MD[3,4]; Ryan Gierke, MPH[1]; Olivia Almendares, MSPH[1]; Matthew R Moore, MD[1]; Cynthia G. Whitney, MD[1]; Tamara Pilishvili, MPH[1]

Two pneumococcal vaccines are currently licensed for use in the United States: the 13-valent pneumococcal conjugate vaccine (PCV13 [Prevnar 13, Wyeth Pharmaceuticals, Inc., a subsidiary of Pfizer Inc.]) and the 23-valent pneumococcal polysaccharide vaccine (PPSV23 [Pneumovax 23, Merck and Co., Inc.]). The Advisory Committee on Immunization Practices (ACIP) currently recommends that a dose of PCV13 be followed by a dose of PPSV23 in all adults aged ≥65 years who have not previously received pneumococcal vaccine and in persons aged ≥2 years who are at high risk for pneumococcal disease because of underlying medical conditions (Table) (*1–4*). The recommended intervals between PCV13 and PPSV23 given in series differ by age and risk group and the order in which the two vaccines are given (*1–4*).

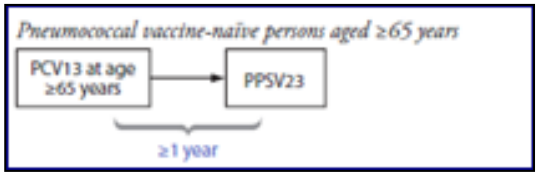
On June 25, 2015, ACIP changed the recommended interval between PCV13 followed by PPSV23 (PCV13–PPSV23 sequence) from 6–12 months to ≥1 year for immunocompetent adults aged ≥65 years. Recommended intervals for all other age and risk groups remain unchanged. This report outlines the rationale for this change and summarizes the evidence considered by ACIP to make this recommendation.

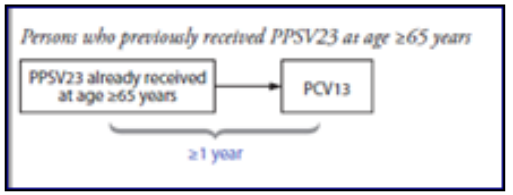
In August 2014, ACIP recommended routine use of a dose of PCV13 followed by a dose of PPSV23 6–12 months later among immunocompetent adults aged ≥65 years (*1*). Adults aged ≥65 years with immunocompromising conditions, functional or anatomic asplenia, cerebrospinal fluid (CSF) leaks, or cochlear implants are recommended to receive PCV13 first, followed by PPSV23 ≥8 weeks later (*2*). ACIP also recommended that all adults aged ≥65 years who already received PPSV23 should receive a dose of PCV13 ≥1 year after receipt of PPSV23 (PPSV23–PCV13 sequence). The difference in the recommended interval depending on the order in which the two vaccines were given added significant complexity to the recommendation and created implementation challenges for this age group. To simplify the recommendations, ACIP reviewed existing data to evaluate potential areas for harmonization of recommended dosing intervals. Specifically, ACIP assessed whether available evidence would support changing the recommended interval for the PCV13–PPSV23 sequence for immunocompetent adults aged ≥65 years from 6–12 months to ≥1 year and thus be harmonized with the recommended interval for the PPSV23–PCV13 sequence in the same age group.

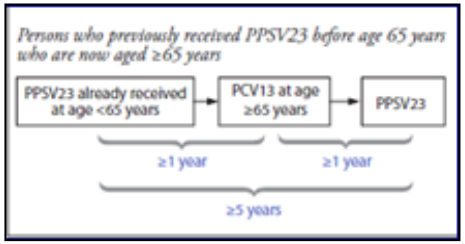
Recommendations for routine use of vaccines in children, adolescents and adults are developed by the Advisory Committee on Immunization Practices (ACIP). ACIP is chartered as a federal advisory committee to provide expert external advice and guidance to the Director of the Centers for Disease Control and Prevention (CDC) on use of vaccines and related agents for the control of vaccine-preventable diseases in the civilian population of the United States. Recommendations for routine use of vaccines in children and adolescents are harmonized to the greatest extent possible with recommendations made by the American Academy of Pediatrics (AAP), the American Academy of Family Physicians (AAFP), and the American College of Obstetricians and Gynecologists (ACOG). Recommendations for routine use of vaccines in adults are harmonized with recommendations of AAFP, ACOG, and the American College of Physicians (ACP). ACIP recommendations approved by the CDC Director become agency guidelines on the date published in the Morbidity and Mortality Weekly Report (MMWR). *Additional information about ACIP is available at http://www.cdc.gov/vaccines/acip.*

No clinical studies evaluating efficacy of the two vaccines given in series are available. Therefore, current recommendations are based on best available evidence from immunogenicity studies. The Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) framework was used by ACIP to formulate the existing recommendations for immunocompromised children (http://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-child.html), immunocompromised adults (http://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html), and adults ≥65 years (http://www.cdc.gov/vaccines/acip/recs/grade/pneumo-vac-adult.html) (*1–3*). No new evidence was available to inform harmonization of intervals; therefore, the GRADE process was not repeated. In addition, the immunogenicity studies were not designed to evaluate the optimal interval between the two vaccines. When both PCV13 and PPSV23 are to be administered, PCV13 is recommended before PPSV23, based on studies demonstrating a better response to serotypes common to both vaccines when PCV was given first (*5–7*).

Studies evaluating the immune response to a conjugate vaccine (PCV7 or PCV13) followed by the polysaccharide vaccine (PCV–PPSV23 sequence) at intervals of 2, 6, or 12 months or 3–4 years demonstrated that following the PPSV23 dose,



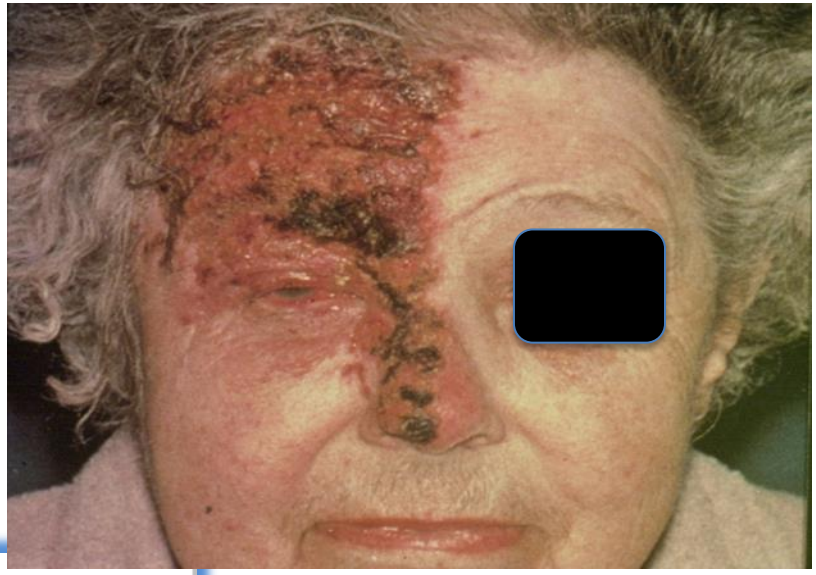


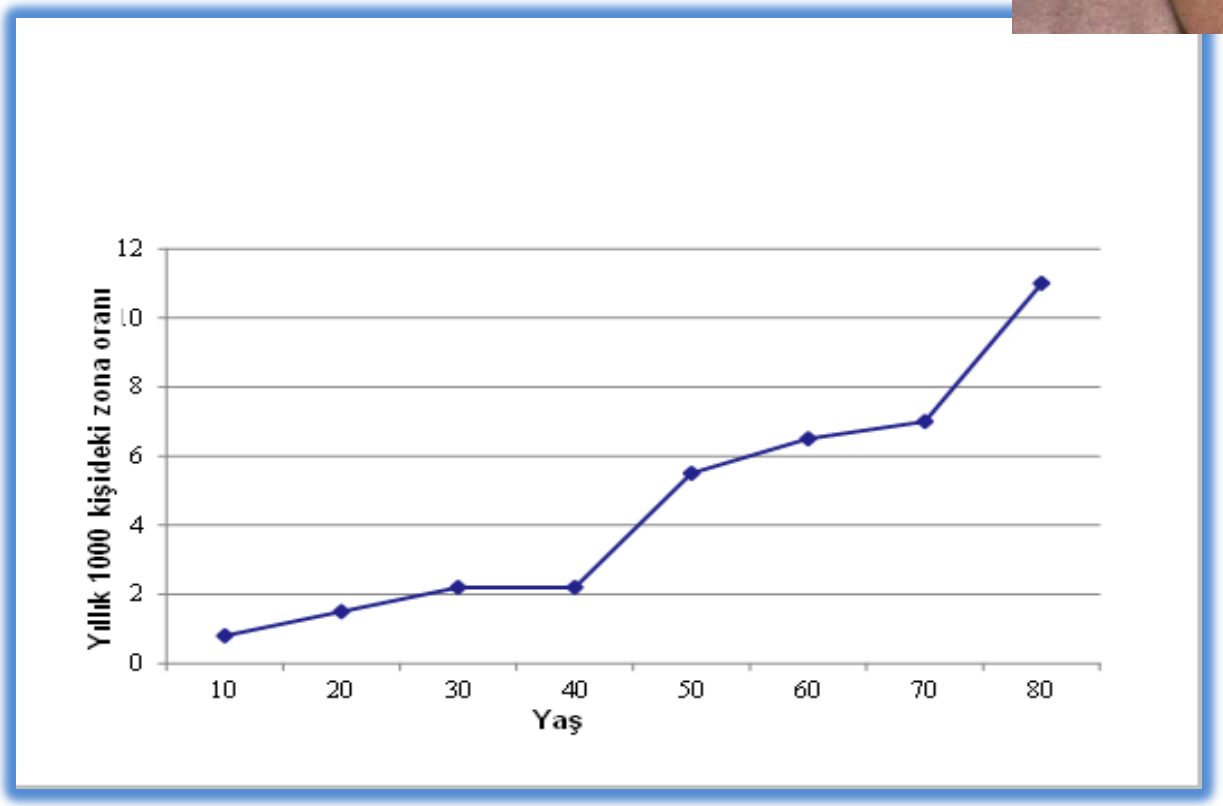


Zoster Aşısı

- ✓ **Zona zoster ve post herpetik nevralji komplikasyonu önlemek üzere geliştirilmiş bir aşıdır.**
- ✓ **≥60 yaş erişkinlerde önerilmektedir Kanser tanısı almadan önce yapılan aşının kemoterapi sonrası zona gelişme sıklığını anlamlı düzeyde azalttığı gösterilmiştir.**
- ✓ **Zona aşısı canlı, zayıflatılmış Oka suşundan elde edilmiştir. Bu aşı, suçiçeği aşısı ile aynı kökenden elde edilmekle birlikte, içerdiği antijen miktarı, suçiçeği aşısından 14 kat daha fazladır**
- ✓ **2006 yılında 60 yaş ve üstü, 2011 yılında 50 yaş ve üstü için FDA -onayı.**
- ✓ **ACIP- tarafından 2008 yılından itibaren 60 yaş ve üstü kişilere önerilmektedir.**
- ✓ **Zona aşısını uygulamadan önce serolojik inceleme yapmak veya geçirilmiş infeksiyon öyküsünü sorgulamak gereksizdir.**

ZONA




Yıllık 1000 kişideki zona oranı
0
2
4
6
8
10
12
10
20
30
40
50
60
70
80
Yaş

Zona Aşısı Kimlere Yapılmamalı

- ✓ Remisyonda olmayan hematolojik kanserli hastalar
- ✓ Son üç ay içinde sitotoksik kemoterapi alan hastalar
- ✓ KHN –alıcıları
- ✓ T-hücre immün yetmezliği olanlar (örneğin CD4 sayısı ≤200 /mm^3 veya total lenfosit sayısının <%15
- ✓ Yüksek doz immün baskılayıcı tedavi alanlar (örneğin, ≥20 mg prednizon/gün ≥2 hafta veya anti–TNF tedavi)
- ✓ Asiklovir, valasiklovir ve famsiklovir alan kişilerde, aşı uygulanmadan en az 24 saat önce bu ilaçlar kesilmeli ve aşı uygulandıktan en az 14 gün sonra kullanılmalıdır.

İMMUNSUPRESİF TEDAVİDEN ÖNCE 2 HAFTA- 4 HAFTA UYGULANMALI

Vaccination Against Zoster Remains Effective in Older Adults Who Later Undergo Chemotherapy

Hung Fu Tseng,[1] Sara Tartof,[1] Rafael Harpaz,[2] Yi Luo,[1] Lina S. Sy,[1] Julin C. Hetcher,[1] and Steven J. Jacobsen[1]

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(See the Editorial Commentary by Oxman and Schmader on pages 920–2.)

Background. Approximately 40% of adults develop invasive cancer during their lifetimes, many of whom require chemotherapy. Herpes zoster (HZ) is common and often severe in patients undergoing chemotherapy, yet there are no data regarding whether these patients retain specific protection against HZ if they had previously received zoster vaccine. We conducted a study to determine whether zoster vaccine was effective in patients who subsequently underwent chemotherapy.

Methods. The cohort study consisted of Kaiser Permanente Southern California members aged ≥60 years treated with chemotherapy. The exposure variable was receipt of zoster vaccine prior to initiation of chemotherapy. Incident HZ cases were identified using *International Classification of Diseases, Ninth Revision* diagnostic codes. HZ incidence rates were calculated; hazard ratios (HRs) and 95% confidence intervals (CIs) were estimated using Cox proportional hazards regression models.

Results. There were 91 and 583 HZ cases in the vaccinated and unvaccinated cohorts, respectively, yielding an incidence rate of 12.87 (95% CI, 10.48–15.80) vs 22.05 (95% CI, 20.33–23.92) per 1000 person-years. Thirty-month cumulative incidence was 3.28% in the vaccinated group and 5.34% in the unvaccinated group ($P < .05$). The adjusted HR for HZ was 0.58 (95% CI, .46–.73) and showed no significant variation by age, sex, or race. HZ incidence rates remain[illegible] but thi[illegible] for HZ, compar[illegible]

Con[illegible] Our findings pr[illegible]ompetent

Key[illegible]

Kanser tanısı almadan önce yapılan aşının kemoterapi sonrası zona gelişme sıklığını anlamlı düzeyde azalttığı gösterilmiş

Herpes [illegible]], hematease c[illegible]atment of (VZV) [illegible]ndergoing HZ inc[illegible]are almost age, bu[illegible]dition, impression, whether due to human immunodeficiency virus (HIV) infection [1], treatment of autoimmune diseases [illegible] immunosuppressed individuals are at greatest risk of the most severe ophthalmologic and neurologic complications of HZ, including visceral dissemination [10].

Zoster vaccine (Zostavax) has been shown to be safe and protective in immunocompetent elderly populations [11–13], but the vaccine is comprised of the live attenuated Oka strain of VZV and is thus contraindicated in immunocompromised persons due to a lack of data on vaccine safety and efficacy in these patients; the Shingles Prevention Study excluded patients who were immunosuppressed due to malignancy, HIV infection,

Received 3 March 2014; accepted 26 May 2014; electronically published 4 August 2014.

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Clinical Infectious Diseases 2014;59(7):913–9

DOI: 10.1093/cid/ciu488

- Erişkinlerin % 40 ında invaziv kanser gelişiyor ve kemoterapi aldığı belirtiliyor
- ≥60 yaş kanser kemoterapisi alan hastalar araştırılmış
- Zoster aşısı almış grupta

  Herpes zoster % 12.87 (95% CI, 10.48–15.80)
- Zoster aşısı almamış grupta

  Herpes zoster %22.05 (95% CI, 20.33–23.92)

1000 kişi-yıl

Zoster Vaccine Remains Effective After Chemotherapy • CID 2014:59 (1 October)

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 MAY 28, 2015 VOL. 372 NO. 22

Efficacy of an Adjuvanted Herpes Zoster Subunit Vaccine in Older Adults

Himal Lal, M.D., Anthony L. Cunningham, M.B., B.S., M.D., Olivier Godeaux, M.D., Roman Chlibek, M.D., Ph.D., Javier Diez-Domingo, M.D., Ph.D., Shinn-Jang Hwang, M.D., Myron J. Levin, M.D., Janet E. McElhaney, M.D., Airi Poder, M... ...abe, M.D., Ph.D., ...D.,

BACKGROUND

In previous ph... ing varicella-... had a clinical...

METHODS

We conducted... evaluate the e... according to ... intramuscula... tive was to as... the risk of he...

RESULTS

A total of 15... (7698 partici... 3.2 years, her... in 210 partici... years) in the ... zoster was 9... ficacy was be... tion-site and ... in the vaccine ... toms in 17.0%... of participant... cases or who...

CONCLUSIONS

The HZ/su va... were 50 years ... older was si... Biologicals; Z...

A live-attenuated vaccine against herpes zoster (Zostavax, Merck) containing the Oka VZV strain is licensed for use in adults who are 50 years of age or older.[1,6] Zostavax showed 51.3% efficacy against herpes zoster and 66.5% efficacy against postherpetic neuralgia in participants who were 60 years of age or older.[7] However, its efficacy against herpes zoster decreased with age (from 69.8% in adults between the ages of 50 and 59 years to 37.6% in those ≥70 years of age),[7,8] and it is contraindicated for use in persons with immunosuppression in whom live-attenuated vaccines may cause disease.[1,6]

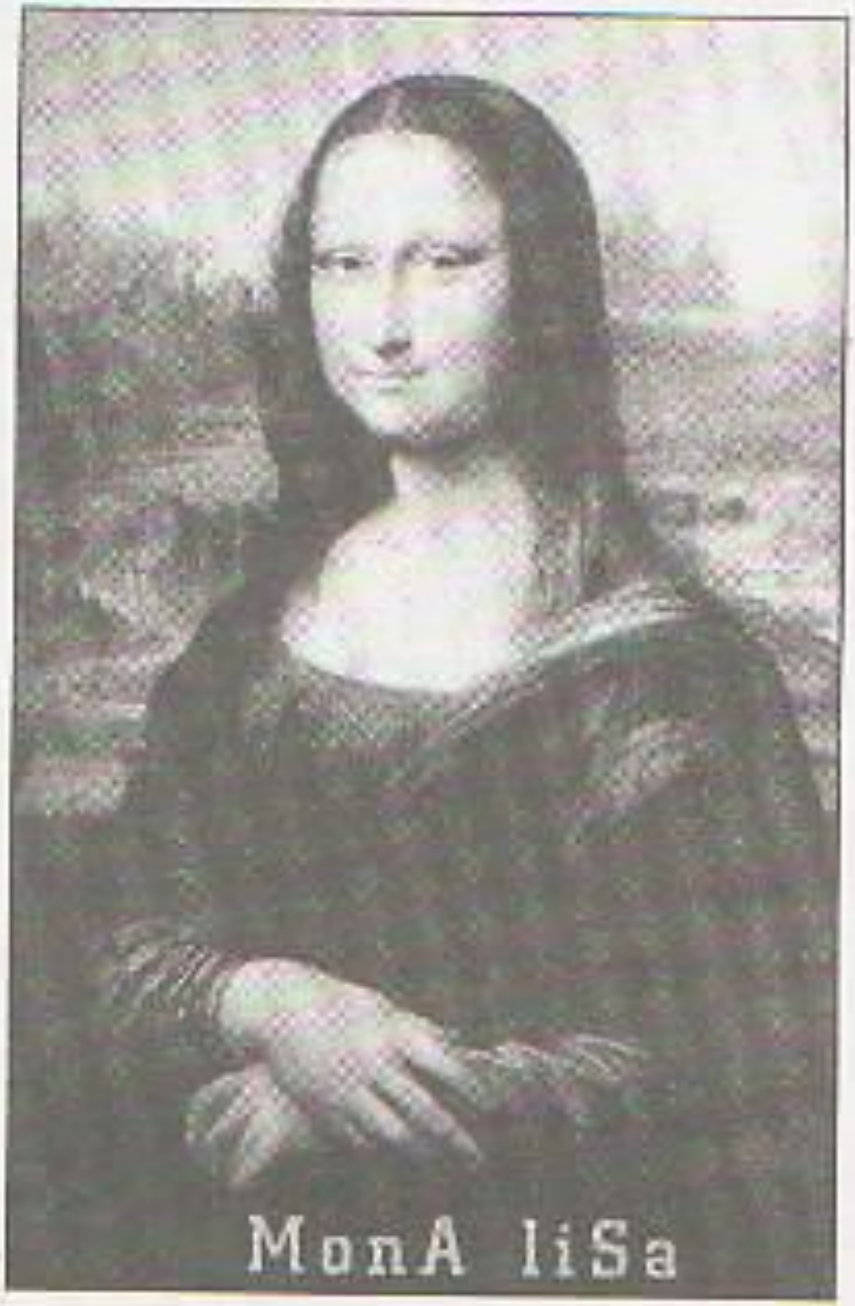
Recombinant subunit vaccines are an alternative to live-attenuated vaccines and may also be suitable for persons with immunosuppression because the risk of disease resulting from replication of the vaccine virus is prevented.[9,10] An investigational recombinant subunit vaccine containing VZV glycoprotein E and the $AS01_E$ adjuvant system (called HZ/su, GlaxoSmithKline Biologicals) is being evaluated for the prevention of

Commentary

Successful Control of Vaccine-Preventable Diseases Requires More than Vaccines

Walter A. Orenstein, MD, Lance E. Rodewald, MD

Am J Prev Med 2000;19(3S)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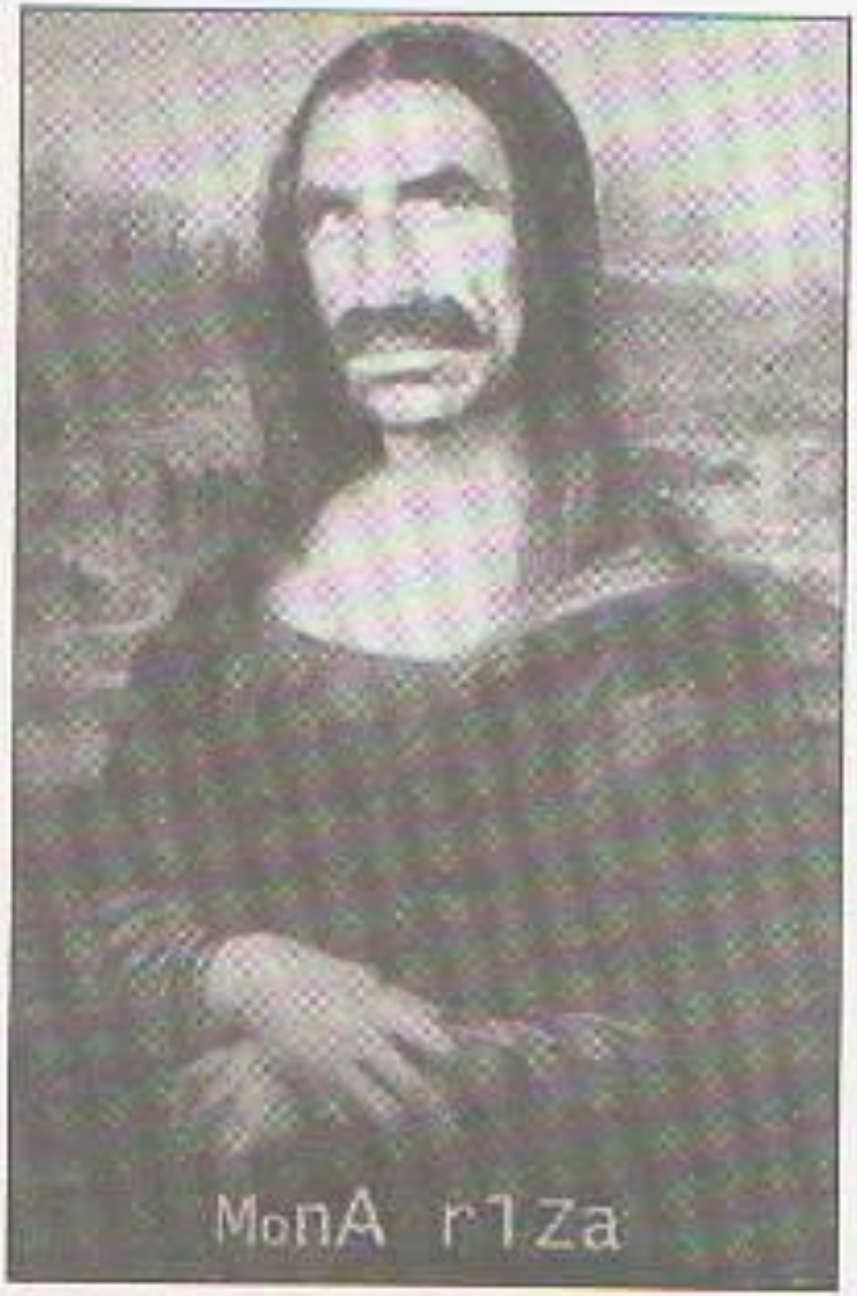

MonA rIZa

Aşılamada Sorunlar

- Performans Sorunu
- Uyum Sorunu
- Bilgi Sorunu

TABLE 1
Administration rates of specific vaccines among those who administer vaccines (15)

Immunization	Percent of Those Who Give Vaccines That Administer This Particular Vaccine	Mean Administrations per Month (SD)
HPV	91.0	20.6 (28.0)
Influenza	66.8	30.07 (31.19)
TDAP	29.9%	8.78 (11.50)
MMR	28.1%	4.25 (5.05)
Varicella	19.1%	5.16 (8.15)
Pneumococcal	14.3%	1.90 (2.59)
HAV	11.0%	2.06 (3.24)
Herpes zoster	8.5%	3.09 (5.75)
Meningococcal	7.3%	0.71 (.76)

Leddy MA, et al. Obstetrical and Gynecological Survey 2009; 64 (12): 823-829

Türkiye Erişkin Bağışıklama Oranları

Tüm olgular (n = 12.235)

	n	%
AŞI (-)	11151	91,1
AŞI (+)	1084	8,9
Hepatit B	504	4,1
İnfluenza	547	4,5
Pnömokok*	117	1,0

EGE BÖLGESİ ERİŞKİN İMMÜNİZASYONU TARAMA ÇALIŞMASI-**TÜRK İÇ HASTALIKLARI UZMANLIK DERNEĞİ EGE BÖLGESİ ÇALIŞMA GRUBU**

Türkiye'deki riskli gruplarda aşılama oranları

TIHUD

Ege Bölgesi Çalışma Grubu

Türkiye'de Diyabetik Hastalardaki Aşılama Oranları

%0.1 pnömokok aşılama oranı

%9.1 influenza aşılama oranı

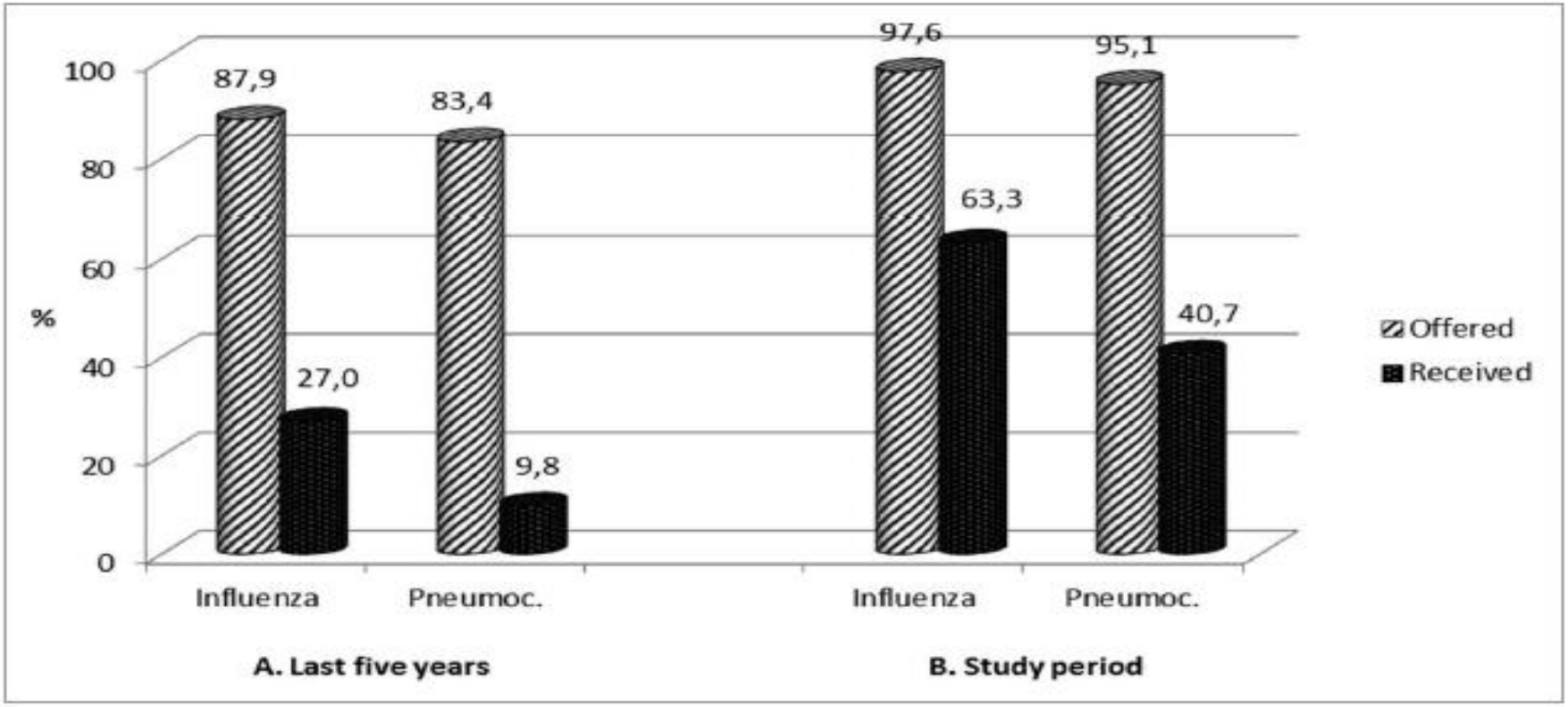
- DM;KKY;KOAH,KBY ve >65 yaş üzeri, yüz-yüze anket çalışması,2029 kişi
- Influenza aşılanma oranı %12.8 and pnömokok %2.7.
- Aşılanmamış kişilerin % 95.3ü hekim önerisi olsaydı yaptıracaklarını bildirmişler

Yaşlı ve yüksek riskli hastada influenza ve pnömokok aşılanma oranları, Yozgat, Ayşe Erbay

Human Vaccines & Immunotherapeutics 9:12, 2618–2626; December 2013; © 2013 Landes Bioscience

The effect of physicians' awareness on influenza and pneumococcal vaccination rates and correlates of vaccination in patients with diabetes in Turkey

An epidemiological Study "diaVAX"



vaccinated. More structural/systematic vaccination programs are needed to increase the vaccination rates in patients with diabetes.

Original Article

Ten-year surveillance of invasive *Streptococcus pneumoniae* isolates in central Turkey prior to the introduction of a conjugate vaccine

Duygu Percin[1], Yasemin Ay Altintop[1], Bulent Sumerkan[1]

[1]*Department of Microbiology and Clinical Microbiology, Faculty of Medicine, Erciyes University, 38039-Kayseri/Turkey*

Abstract

Introduction: The aim of this study was to characterize the serotypes and antimicrobial susceptibility patterns of invasive *Streptococcus pneumoniae* isolates in central Turkey.

Methodology: A total of 332 invasive *S. pneumoniae* isolates were identified, serotyped and tested for antimicrobial susceptibility by routine microbiological methods.

Results: The most common serogroups/serotypes were 1, 19, 3, 18, 6, 14, and 7 in rank order. Serogroup/serotype coverage of the 23-valent polysaccharide vaccine, and the 7-, 10-, and 13-valent conjugate vaccines were 96%, 44%, 78.6%, 96.4%, respectively. Overall, 20 (6%) of the isolates were resistant to penicillin, 1 (0.3%) to cefotaxime, 20 (6%) to erythromycin, 13 (4%) to cloramphenicol, and 120 (36%) to trimethoprim-sulfamethoxasole. Among cerebrospinal fluid (CSF) isolates, 20 (18.5%) were resistant to penicillin (26.3% and 11.5%, respectively, of child and adult meningitis cases; $p \geq 0.05$).

Conclusions: Although the seven-valent conjugate vaccine is expected to protect less than half of children younger than three years of age, of the incorporation of this vaccine into the routine immunization program of Turkey is advised to continue. However, the 13-valent conjugate vaccine, including serotypes 1, 3, 5, and 7, has the most potential prevent the highest burden of invasive pneumococcal diseases in this age group.

Key words: *Streptococcus pneumoniae*, vaccine, serotyping, antimicrobial susceptibility

J Infect Dev Ctries 2010; 4(9):560-565.

(Received 14 January 2010 – Accepted 21 March 2010)

ERİŞKİN BAĞIŞIKLAMASI

Günümüzde yaşlılarda ölümlerin en önemli nedenlerinin başında pnömoniler geliyor

Sigara kullanımı ve diğer risk faktörleri yaygın

Pnömokok ve influenza aşıları bu nedenle çok önemli

DİNLEDİĞİNİZ İÇİN TEŞEKKÜRLER…

SORULARINIZ?

Prof. Dr. Esin Şenol