

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Chemo-prophylaxis

Principles & Practice

**Shahid Beheshti University
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کموپرو فیلاکسی در استراتژی های چهار گانه کنترل بیماری های واگیر

Diseases Prevention & Control Strategies:

- Individual
- Institutional
- Community
- Global

Diseases Prevention & Control Strategies:

Chemoprophylaxis

- Individual
- Institutional
- Community
- Global

۱ - کدامیک از انواع پروفیلاکسی، صرفاً در سطح فردی (Individual) کاربرد دارد؟

الف) ایمونوپروفیلاکسی پسیو

ب) ایمونوپروفیلاکسی اکتیو

ج) کموپروفیلاکسی

د) ایمونوپروفیلاکسی پسیو و کموپروفیلاکسی

۲ - کدامیک از انواع پروفیلاکسی، در سطح فردی (Individual) و موسسه ای (Institutional) کاربرد دارد (در سطوح دیگر عملاً کاربردی ندارد)؟

الف) ایمونوپروفیلاکسی پسیو

ب) ایمونوپروفیلاکسی اکتیو

ج) کموپروفیلاکسی

د) ایمونوپروفیلاکسی پسیو و کموپروفیلاکسی

Diseases Prevention & Control Strategies:

Chemoprophylaxis

1. Individual Level

- Surgical wound infections
- Close contact to Meningococcal & Haemophilus influenza infection

۳ - برنامه‌هایی که به منظور جلوگیری از انتقال عوامل عفونتهای منتقله از طریق خون به کارکنان بهداشتی انجام میشود کدامیک از استراتژی‌های کنترلی می‌باشند؟

الف) فردی

ب) موسسه‌ای

ج) جامعه

د) جهانی

Diseases Prevention & Control Strategies:

Chemoprophylaxis

2. Institutional Level

- Health care facilities
- Nursing homes
- Other residential facilities
- Schools





- Health care facilities
- Nursing homes
- Other residential facilities
- Schools
- Programs to prevent the spread of bloodborne pathogens or tuberculosis to health care workers in hospitals.

۴ - جمع آوری و حذف یک ماده آلوده از فروشگاهها
کدامیک از استراتژی‌های کنترلی است؟

الف) فردی

ب) موسسه ای

ج) جامعه

د) جهانی

Diseases Prevention & Control Strategies:

Chemoprophylaxis

3. Community Level

- Removal of a contaminated food product from the market.

Diseases Prevention & Control Strategies:

Chemoprophylaxis

4. Global Level

- For a number of important pathogens, it has become clear that **global control** strategies are critical to have an impact on disease occurrence



Diseases Prevention & Control Strategies:

Chemoprophylaxis

4. Global Level

- The growing proportion of **TB cases among refugees** and immigrants to the USA.
- Ongoing episodes of **importation of measles** from abroad in the early 21st century.



کمپرو و فیلاکسی در سطوح سه گانه پیشگیری

کموپروفیلاکسی به عنوان سطح اول پیشگیری

- **As a primary prevention strategy**, it may be used before or after exposure to prevent infection.

Examples of chemoprophylaxis

- In the postexposure setting include:
 - **Erythromycin** after exposure to pertussis;
 - **Rifampin** after *N. meningitidis*;
 - **Amantadine, rimantadine, zanamir, or oseltamivir** after influenza A virus;
 - **Zidovudine** after HIV exposure.

کمپروفیلاکسی به عنوان سطح دوّم پیشگیری

- پیشگیری از حملات ثانویه ARF

Chronic Granulomatous Disease (CGD)

Mechanism

۵ - در بیماریهای گرانولوماتوز مزمن، کلیه وقایع زیر رخ میدهد بجز؟

الف) عفونت ناشی از عوامل کاتالاز منفی

ب) تولید گرانولوم

ج) کاهش تولید سوپراکسید

د) اختلال در کشتن باکتریها و قارچها

Chronic Granulomatous Disease (CGD)

Phagocytes

Bacterial and fungal killing defective in all forms of CGD

- Infections with catalase + microbes, granulomas, and reduced superoxide generation



۶ - عفونت‌های ریوی، پوستی و استخوانی در افراد مبتلا به CGD که تحت کمپروپروفیلاکسی نمی‌باشند، معمولاً ناشی از کدامیک از میکروارگانیسم‌های زیر است؟

الف) کاندیدا

ب) استافیلوکوک

ج) اسپرژیلوس

د) استرپتوکوک

۷ - عفونت ناشی از کلیه ارگان‌های زیر در افراد مشکوک به CGD قویا حاکی از وجود این بیماری است
بجز؟

الف) سریشیا مارسینس

ب) کروموباکتریوم ویولاسئوم

ج) نوکاردیا

د) استرپتوکوک

۸ - عفونت ناشی از کلیه ارگان‌های زیر در افراد
مشکوک به CGD قویا حاکی از وجود این بیماری است
بجز؟

- الف) پseudomonas آئروژینوزا
- ب) بورخولدريا سپاسيا
- ج) سراشيا مارسسس
- د) کروموباكتريوم ويولاسئوم

Chronic Granulomatous Disease (CGD)

- In the absence of antibiotic prophylaxis, lung, skin, and bone infections are also usually *staphylococcal*.
- *Aspergillus spp.* and some of the rarer fungi, such as *Exophiala dermatitidis* and *Paecilomyces spp.*, are encountered in CGD.
- Infections with *Nocardia spp.*, *Chromobacterium violaceum*, *S. marcescens*, and *B. cepacia* are seen frequently in patients with CGD and strongly suggest the diagnosis.

۹ - کمپروپیلاکسی باعث کاهش واضح شیوع کدامیک
از عفونت‌های زیر در زمینه بیماری‌های گرانولوماتوز
مزمن میشود؟

الف) ویروسی

ب) انگلی

ج) قارچی

د) استافیلوکوکی

Chronic Granulomatous Disease (CGD)

- **Antibiotic prophylaxis** has altered the frequency of infections in CGD and has reduced the frequency of **staphylococcal** infections in particular.

۱۰ - عفونت‌های خارج کبدی و خارج عقده‌های لنفاوی
در زمینه CGD که تحت پوشش کموپروفیلاکسی
می‌باشد به احتمال زیاد ناشی از کدامیک از
ارگانیزم‌های زیر نمی‌باشد؟

الف) ویروسی

ب) انگلی

ج) قارچی

د) استافیلوکوکی

Chronic Granulomatous Disease (CGD)

- **Infections outside the liver or lymph nodes occurring in CGD** patients who have been taking antibacterial prophylaxis should not be presumed to be **staphylococcal**.

۱۱ - کلیه مطالب زیر در مورد بیماری‌های قارچی در زمینه CGD صحیح است بجز؟

الف) شیوع بیماری‌های قارچی بیشتر از بیماری‌های باکتریال است
ب) ایتراکونازول، باعث کاهش فراوانی و شدت بیماری‌های قارچی
می‌شود

ج) گونه‌های آسپرژیلوس در این زمینه بیماریزا واقع می‌شوند
د) قارچ‌های نادری نظیر اگزوفیلیا و پسیلومایسس نیز بیماریزا واقع
می‌شوند

Chronic Granulomatous Disease (CGD)

- **The rate of fungal infections in CGD** is lower than that for bacterial infections and has apparently not changed in the setting of prophylactic antibiotics.
- **Itraconazole prophylaxis** has reduced the frequency and severity of fungal infections in patients with CGD.

Prophylactic use of Penicillins

1. Prevention of Rheumatic fever
2. Outbreaks of *S. pyogenes*
3. Early-onset *S. agalactiae* (GBS)
4. Asplenic & Agammaglobulinemia children

Prophylactic use of Penicillins

1. Prevention of Rheumatic fever

- The oral administration of 200,000 units of **penicillin G or V** every 12 hours or intramuscular injections of 1.2 or 2.4 million units of **benzathine penicillin** given once each month are effective in **prevention of recurrences of rheumatic fever.**

TABLE 199-1 Primary Prevention of Rheumatic Fever (Treatment of Streptococcal Tonsillopharyngitis)

AGENT	DOSAGE	ROUTE	DURATION (DAYS)
Penicillins			
Penicillin V (phenoxymethyl penicillin)	Children ≤ 27 kg (60 lb): 250 mg two to three times daily Children > 27 kg, adolescents, and adults: 500 mg two to three times daily	Oral	10
<i>or</i>			
Amoxicillin	50 mg/kg once daily (maximum, 1 g)	Oral	10
<i>or</i>			
Benzathine penicillin G	600,000 U for patients ≤ 27 kg; 1.2 million U for patients > 27 kg	Intramuscular	Once

۱۳ - در پیشگیری اولیه ARF که همان درمان فارنژیت استرپتوکوکی است در صورت وجود هیپرسانسیتیویته تایپ ۱، کلیه داروهای زیر را می توان تجویز کرد بجز؟

الف) کلاریترومایسین

ب) آزیترومایسین

ج) کلیندامایسین

د) سفادروکسیل

For Individuals Allergic to Penicillin

Narrow-spectrum cephalosporin [†] (cephalexin, cefadroxil) <i>or</i>	Variable	Oral	10
Clindamycin <i>or</i>	20 mg/kg/day divided in three doses (maximum, 1.8 g/day)	Oral	10
Azithromycin <i>or</i>	12 mg/kg once daily (maximum, 500 mg)	Oral	5
Clarithromycin	15 mg/kg/day divided twice daily (maximum 250 mg twice daily)	Oral	10

*The following are not acceptable: sulfonamides, trimethoprim, tetracyclines, and fluoroquinolones.

[†]To be avoided in those with immediate (type I) hypersensitivity to a penicillin.

۱۴ - در پیشگیری ثانویه ARF در صورت حساسیت به
پنی سیلین، ترجیحا کدامیک از داروهای زیر را تجویز
می کنید؟

الف) نیتازوکسانید (آزولید)

ب) آزیترومایسین (ماکرولید)

ج) سولفادیازین

د) هیچکدام

TABLE 200-4 Secondary Prevention of Rheumatic Fever (Prevention of Recurrent Attacks)

AGENT	DOSE	MODE
Benzathine penicillin G	600,000 U for children ≤ 27 kg (60 lb), 1.2 million U for those > 27 kg (60 lb) every 4 wk*	Intramuscular
Penicillin V	250 mg twice daily	Oral
Sulfadiazine	0.5 g once daily for patients ≤ 27 kg (60 lb) 1.0 g once daily for patients > 27 kg (60 lb)	Oral
For Individuals Allergic to Penicillin and Sulfadiazine		
Macrolide or azalide	Variable	Oral

*In high-risk situations, administration every 3 weeks is justified and recommended.

۱۵ - پروفیلاکسی ثانویه ARF را در کسانی که دچار
کاردیت و ضایعات دریچه ای پایداری هستند معمولا تا
چه موقع ادامه می دهید؟

الف) ۵ سال

ب) ۲۱ سالگی

ج) ۴۰ سالگی

د) تا پایان عمر

TABLE 200-5 Duration of Secondary Rheumatic Fever Prophylaxis

CATEGORY	DURATION AFTER LAST ATTACK
Rheumatic fever with carditis and residual heart disease (persistent valvular disease*)	10 yr or until age 40 yr, whichever is longer; sometimes lifelong prophylaxis (see text)
Rheumatic fever with carditis but no residual heart disease (no valvular disease*)	10 yr or until age 21 yr, whichever is longer
Rheumatic fever without carditis	5 yr or until age 21 yr, whichever is longer

*Clinical or echocardiographic evidence.

۱۶ - به منظور پیشگیری از گلومرولونفریت حاد بعد از عفونت استرپتوکوکی (APSGN) معمولاً کدامیک از آنتی بیوتیک‌های زیر را توصیه می‌کنید؟

الف) پنی سیلین

ب) سفالوسپورین

ج) ماکرولید

د) هیچکدام

Prophylactic use of Penicillins

1. Prevention of Rheumatic fever

- For penicillin allergic individuals with daily sulfadiazine, macrolide, or azalide, usually at least until age.

- Because APSGN* only very rarely recurs, no preventative antibiotic therapy is indicated

* Acute poststreptococcal glomerulonephritis (APSGN)

۱۷ - به منظور کنترل طغیان ناشی از استرپتوکوک
پیوژن، پروفیلاکسی با کلیه داروهای زیر توصیه شده
است بجز؟

- الف) کلاریترومایسین به مدت ۵ روز
- ب) بنزاتین پنی سیلین یک تزریق واحد
- ج) پنی سیلین پروکائین عضلانی تا ۵ روز
- د) پنی سیلین G یا V به مدت ۵ روز

Prophylactic use of Penicillins

2. Outbreaks of *S. pyogenes*

- **Outbreaks of streptococcal infection due to *S. pyogenes*** have been aborted by:
 1. Oral **penicillin G** or V (200,000 units) given twice a day for 5 days,
 2. Single injections of **procaine penicillin** daily, or
 3. By administration of **benzathine penicillin**.

Prophylactic use of Penicillins

3. Early-onset *S. agalactiae* (GBS)

- **Intrapartum prophylaxis with penicillin**
- Intrapartum antibiotic prophylaxis given to colonized parturients during labor prevents early-onset infections in neonates, thus reducing the overall rate of neonatal sepsis.

Prophylactic use of Penicillins

3. Early-onset *S. agalactiae* (GBS)

- Penicillin G is 5 million units IV, followed by 2.5 to 3.0 million units IV every 4 hours.

۱۸ - همه موارد زیر، جزو اندیکاسیون های کمپروفیلاکسی علیه استرپتوکوک های گروه B طی زایمان هستند بجز؟

- الف) سابقه عفونت زودرس در نوزاد یکی از خواهران خانم باردار
- ب) سابقه باکتریوری ناشی از این عامل طی دوران بارداری
- ج) ابتلاء نوزاد قبلی به عفونت مورد بحث
- د) مثبت بودن کشت واژن یا رکتوم در اواخر بارداری

TABLE 203-3 Indications and Nonindications for Intrapartum Antibiotic Prophylaxis to Prevent Early-Onset GBS Disease

INTRAPARTUM GBS PROPHYLAXIS INDICATED

Previous infant with invasive GBS disease

GBS bacteriuria during any trimester of the current pregnancy*

Positive GBS vaginal-rectal screening culture in late gestation[†] during current pregnancy*

Unknown GBS status at the onset of labor (culture not done, incomplete, or results unknown) and any of the following:

- Delivery at <37 wk gestation
- Amniotic membrane rupture ≥18 hr
- Intrapartum temperature ≥100.4°F (≥38.0°C)[‡]
- Intrapartum NAAT[§] positive for GBS

INTRAPARTUM GBS PROPHYLAXIS NOT INDICATED

Colonization with GBS during a previous pregnancy (unless an indication for GBS prophylaxis is present for current pregnancy)

GBS bacteriuria during previous pregnancy (unless an indication for GBS prophylaxis is present for current pregnancy)

Negative vaginal and rectal GBS screening culture in late gestation[†] during the current pregnancy, regardless of intrapartum risk factors

Cesarean delivery performed before onset of labor on a woman with intact amniotic membranes, regardless of GBS colonization status or gestational age

Cesarean and Prophylaxis

Prophylactic use of Penicillins

4. Asplenic & Agammaglobulinemia children

- Ampicillin or amoxicillin has been administered orally to asplenic children or to children with agammaglobulinemia to prevent infections caused by *Haemophilus influenzae* and *S. pneumoniae*.

۱۲ - پروفیلاکسی با پنی سیلین، در کدامیک از موارد زیر، توصیه شده است؟

الف) عفونت‌های مننگوکوکی

ب) عفونت‌های باکتریال متعاقب عفونت‌های ویروسی

ج) پنومونی بعد از کوما، شوک و نارسایی احتقانی قلب

د) استرپتوکوک آگالاکتیا در شیرخوارانِ مادرانِ آلوده

۱۹ - کموپروفیلاکسی با پنی سیلین در کدامیک از موارد زیر، موثر واقع میشود؟

- الف) عفونت مننگوکوکی در اطرافیان
- ب) عفونت هموفیلوسی در زمینه آسپلنی
- ج) عفونت باکتریال متعاقب عفونتهای ویروسی
- د) پنومونی پس از کوما، شوک یا نارسایی احتقانی قلب

Prophylactic use of Penicillins

Meningitis, pneumonia, ...

- **Penicillin prophylaxis has not been of benefit in the prevention of:**
 1. Meningococcal infection,
 2. Bacterial infection after viral respiratory tract infection,
 3. Pneumonia after coma, shock, or congestive heart failure

Prophylactic use of Cephalosporins

۲۱ - کدامیک از سفالوسپورین‌های زیر ترجیحاً طی جراحی‌های کولورکتال، مورد استفاده قرار می‌گیرند؟

الف) سفازولین

ب) سفوتتان

ج) سفالکسین

د) سفتریاکسون

۲۲ - کدامیک از سفالوسپورین‌های زیر ترجیحاً طی جراحی‌های کولورکتال، مورد استفاده قرار می‌گیرند؟

الف) سفوکسیتین

ب) سفازولین

ج) سفالکسین

د) سفتریاکسون

Prophylactic use of Cephalosporins

Cefoxitin, Cefotetan

- For antimicrobial prophylaxis **during surgery**, **cefoxitin** and **cefotetan** are recommended over cefazolin only for **colorectal procedures** and **appendectomies**.
- For **elective colorectal surgery**, **cefoxitin** or **cefotetan** is still commonly administered even when an oral bowel preparation with **erythromycin** and **neomycin** is used.

۲۰ - کدامیک از سفالوسپورین‌ها به عنوان داروی انتخابی در پروفیلاکسی تعبیه جسم خارجی در بدن و بسیاری از اعمال جراحی دیگر که خطر وقوع عفونت، بسیار بالا است توصیه شده است؟

الف) سفازولین

ب) سفوکسیتین

ج) سفوتتان

د) همه موارد

Prophylactic use of Cephalosporins

Cefazolin

- **Cefazolin** is recommended as the prophylactic antibiotic of choice for foreign-body implantation and for many clean and clean contaminated surgical procedures in which there is a high risk of infection.

۲۳ - اثر پروفیلاکتیک فوزیدیک اسید در کدامیک از موارد زیر به اثبات رسیده است؟

- الف) اعمال جراحی مغز و اعصاب
- ب) عفونت‌های مرتبط با دیالیز صفاقی
- ج) قبل از اعمال جراحی چشم
- د) عفونت‌های بعد از اعمال ارتوپدی

Prophylactic use of Fusidic Acid

Fusidic Acid (Surgical Prophylaxis)

- **Not recommended.** Lower infection rate vs. placebo in **neurosurgical patients** given single-dose FA monotherapy and in catheter line prophylaxis¹ without evaluation of impact on resistance
- No difference in **peritonitis** rates in patients with continuous ambulatory peritoneal dialysis¹ or **postoperative orthopedic infections** when used as prophylaxis
- Effective **preoperative prophylaxis** before ocular surgery with fusidic acid drops (1%).



Prophylactic use of Gentamycin



Prophylactic use of *Aminoglycosides*

Gentamicin

- **Gentamicin** or tobramycin, 5 mg/kg IV, is recommended as an alternative in patients with **β -lactam allergy** in genitourinary and gastrointestinal procedures.



Prophylactic use of *Aminoglycosides*

Gentamycin

- **For patients with a known or possible enterococcal urinary tract infection**, it is reasonable to include drugs with antienterococcal activity in the perioperative regimen for **gastrointestinal** or **genitourinary** procedures.



Prophylactic use of *Aminoglycosides*

Gentamycin

- The risk of infection after elective colorectal procedures was significantly reduced by **mechanical cleansing of the bowel** plus oral administration of, usually, **neomycin** and **erythromycin** or **metronidazole** in addition to **standard IV antibiotic prophylaxis** in recent controlled trials.



Prophylactic use of *Aminoglycosides*

Gentamycin

- Decontamination containing gentamicin effectively eradicated carbapenem-resistant *Klebsiella pneumoniae* gastrointestinal carriage, and might be used in nosocomial outbreaks.
- On the other hand, the safety and efficacy of topical gentamicin in cardiac surgery have not been clearly established

Prophylactic use of Doxycycline

1. Malaria
2. Bitterrorism

۲۴ - تاثیر داکسی سیکلین در کمپروفیلاکسی مالاریا به
اندازه کدامیک از داروهای زیر است؟

الف) پریماکین

ب) کلروکین

ج) مفلوکین

د) فانسیدار

۲۵ - در صورتی که از داکسی سیکلین به منظور
کمپروپیلاکسی استفاده شود تا چه مدت پس از
بازگشت از منطقه آندمیک باید ادامه یابد؟

الف) ۱ هفته

ب) ۲ هفته

ج) ۳ هفته

د) ۴ هفته

Prophylactic use of Tetracyclines

Doxycycline & Malaria

- As for chemoprophylaxis, doxycycline has been shown to be as effective as mefloquine in regions with chloroquine-resistant *P. falciparum*.
- In two studies, doxycycline was protective in 99% to 100% of participants, although mefloquine was better tolerated in one study.
- It is recommended that doxycycline be taken for 4 weeks after returning from an endemic area.

Prophylactic use of Tetracyclines

Doxycycline & Bioterrorism

- Doxycycline is active against potential bioterrorism agents, including *B. anthracis*, *Yersinia pestis*, *Francisella tularensis*, *Coxiella burnetii*, and *Brucella* spp.
- Compared with the fluoroquinolones, doxycycline is much less expensive and appears to have similar efficacy in most scenarios on the basis of clinical case studies.
- As a result, doxycycline should be considered as a first-line antibiotic in the event of a bioterrorism attack.

Prophylactic use of Rifampin

1. **Meningococcal & H. influenzae meningitis**
2. **Rifampin, minocycline impregnated catheters.**
3. **Limitations of use in children**
4. **Resistant isolates & Outbreaks**
5. **Decolonization of MRSA carriers**

Prophylactic use of Rifamycins

Rifampin & Meningococcal infections

- **Antibiotics for chemoprophylaxis of *N. meningitidis*** contacts include rifampin, ciprofloxacin, minocycline, and ceftriaxone.
- A 2-day course of **rifampin** (600 twice daily) is effective in eradicating the bacteria from 75% to 95% of carriers.

دوز ریفامپین و مدت زمان تجویز آن؟

Prophylactic use of Rifamycins

Rifampin & Meningococcal infections

Limitations of use in children

- Adverse drug reactions,
- Drug interactions,
- Selection of resistant isolates.

محدودیت های مصرف در کودکان؟

Prophylactic use of Rifamycins

Rifampin & Ceftriaxone

- **Ceftriaxone** was more effective than rifampin after 1 to 4 weeks of follow-up.
- **Resistant isolates** were seen, raising concern that use of rifampin during an outbreak may lead to the circulation of resistant strains.
- Use of ciprofloxacin, ceftriaxone, or **penicillin??** should be considered...

ارتباط منگوکوک های مقاوم به ریفامپین و استفاده از این دارو در طغیان‌ها؟

Prophylactic use of Rifamycins

Rifampin & H. influenzae

- Chemoprophylaxis is recommended for close contacts of a child with invasive *H. influenzae* type b infection using rifampin at doses of 20 mg/kg in children and 600 mg in adults daily for 4 days.

دوز ریفامپین و مدت زمان تجویز آن در عفونتهای هموفیلوسی؟

Prophylactic use of Rifamycins

ریفامین، کاتترهای اشباع شده و باکتریمی بعدی؟

- Another area of infection prophylaxis is the use of **rifampin, minocycline impregnated catheters**.
- Studies have found these catheters to be effective in decreasing catheter-related bacteremia.

کاتترهای اشباع شده با ریفامپین و ماینوسیکلین؟

Prophylactic use of Rifamycins

ریفامین، کاتترهای اشباع شده و باکتری می بعدی؟

- **Two recent studies** in pediatric burn patients and in immunocompromised patients with transplants, cancer, or on dialysis concluded that these catheters are effective in reducing the incidence of catheter-associated bacteremia.

کاتترهای اشباع شده با ریفامپین و ماینوسیکلین؟

Prophylactic use of Rifamycins

Rifampin & Mupirocin

- **For decolonization of MRSA carriers,** mupirocin ointment and chlorhexidine are effective in 60% of patients long term.
- **Oral therapy** is recommended if the topical regimen fails, which may be seen with the increasing rates of isolates resistant to mupirocin.

در چه شرایطی از داروهای خوراکی باید استفاده کنیم؟



Prophylactic use of Rifamycins

Rifampin & Mupirocin

- Rifampin for 5 to 10 days in combination with another agent is recommended if the strain is susceptible and other regimens are ineffective.

جایگزینی ریفامپین به جای موپیروسین؟

Prophylactic use of Metronidazole

1. Surgical prophylaxis
2. alternative agent for: β -lactam-allergic
/intolerant patients
3. Gynecology

Prophylactic use of Metronidazole

- Metronidazole has held an important place in **surgical prophylaxis**, particularly for procedures involving mucosal organs colonized by **anaerobes**, such as the:
 - Gastrointestinal tract and
 - Female reproductive tract.

۲۶ - در کلیه اعمال جراحی زیر از مترونیدازول به منظور کمپروبیلاکسی استفاده می شود بجز؟

- الف) آپاندکتومی غیر کمپلیکه
- ب) جراحی های مرتبط با انسداد روده
- ج) جراحی های کولورکتال
- د) جراحی های باز قلب

Prophylactic use of Metronidazole

- Metronidazole is a first-line recommended agent for the prevention of infection in:
 - Appendectomy for uncomplicated appendicitis,
 - Obstructed small intestinal surgery,
 - Colorectal surgery,
 - Clean contaminated head and neck cancer surgery,
 - Clean contaminated urologic surgery

Prophylactic use of Metronidazole

- **Metronidazole is also recommended as an alternative agent for:**
- β -lactam-allergic/intolerant patients for many surgical indications that carry risk for anaerobic infection, in combination with other antimicrobials .

مترونیدازول به عنوان یک داروی آلترناتیو؟

Prophylactic use of Metronidazole

مترونیدازول در جراحی های زنان و زایمان؟

- **Recommended for preoperative prophylaxis.**
- Reduces infectious complications of surgical abortion.
- Recommended for manual removal of the placenta after parturition
- Repair of third- and fourth-degree vaginal tears.
- In hysterectomy cases and hysterosalpingography
- Hysteroscopy or chromotubation for patients with dilated tubes or a history of pelvic inflammatory disease or tubal damage

Prophylactic use of Metronidazole

Recommended for preoperative prophylaxis.

- **Colorectal surgery prophylaxis:**
- **Initial:** 15 mg/kg IV over 30-60 min about 1 hr before surgery
- **Maintenance:** 7.5 mg/kg IV over 20-60 min at 6 and 12 hr after initial dose

نحوه تجویز مترونیدازول؟

Prophylactic use of Macrolides

1. Pertussis
2. Prophylaxis of disseminated *M. avium*

۲۷ - در کمپروپروفیلاکسی تماس یافتگان با سیاه سرفه، کدامیک از آنتی بیوتیک‌های زیر داروی انتخابی به حساب می‌آید؟

الف) اریترومایسین

ب) کلاریترومایسین

ج) آزیترومایسین

د) همه ماکرولیدها

Prophylactic use of Macrolides

Erythromycin, Clarithromycin & Azithromycin

داروی انتخابی در پروفیلاکسی سیاه سرفه؟

- **Erythromycin** as the antimicrobial agent of choice for treatment of and prophylaxis against **pertussis**
- **Clarithromycin** (15 to 20 mg/kg/day orally in two divided doses, with a maximum of 1 g/day, for 10 to 14 days) and
- **Azithromycin** (10 to 12 mg/kg/day orally in one dose, with a maximum of 500 mg/day, for 5 to 7 days) as alternatives for patients who cannot tolerate erythromycin.

Prophylactic use of Macrolides

Erythromycin, Clarithromycin & Azithromycin

- In AIDS patients with CD4 lower than 100 cells/mm³:
- Prophylaxis of disseminated *M. avium complex* infection with **clarithromycin** (500 mg orally once or twice daily) or **azithromycin** (1200 mg orally once weekly) is effective.

پروفیلاکسی مایکوباکتریوم آویوم در زمینه ایدز؟

Prophylactic use of Vancomycin

1. Alternative choice for prophylaxis
2. β -lactam–allergic patients undergoing cardiovascular surgery
3. Prophylaxis in centers with a high prevalence of MRSA

Prophylactic use of Glycopeptides

Vancomycin

- Vancomycin is an alternative choice for prophylaxis against endocarditis in subjects with cardiac conditions considered at risk for endocarditis and who are allergic to ampicillin.
- Vancomycin is also recommended as a prophylactic agent for β -lactam–allergic patients undergoing cardiovascular surgery or orthopedic procedures with hardware placement and for surgical procedures requiring prophylaxis in centers with a high prevalence of MRSA, although not all studies have shown the effectiveness of this approach.

Prophylactic use of Glycopeptides

Vancomycin

- In the setting of a cluster of infections by methicillin-resistant staphylococci at the institutional level, a switch from β -lactams to vancomycin, or the addition of vancomycin, as surgical prophylaxis may be recommended.
- If vancomycin is chosen for prophylaxis of endocarditis or surgical site infections, the infusion should start within 120 minutes of the beginning of the procedure.
- Each hospital should develop institutional guidelines on the use of vancomycin for the prevention of surgical site infections.

Prophylactic use of Glycopeptides

Vancomycin

- The CDC guidelines have recommended the use of vancomycin for the prevention of **perinatal group B streptococcal disease** in the case of penicillin-allergic women at high risk for β -lactam anaphylaxis, in whom a streptococci isolate was resistant (or with inducible resistance) to clindamycin or with unknown susceptibility pattern.

Prophylactic use of Sulfonamides

Cotrimoxazole & toxoplasmosis

- Studies have noted the successful prophylactic role of sulfadoxine-pyrimethamine treatment in pregnant women, but increased resistance has been reported.

Prophylactic use of Sulfonamides

Cotrimoxazole & urinary tract infections

- Postcoital prophylactic TMP-SMX may reduce recurrent urinary tract infections related to intercourse
- Trimethoprim achieves effective concentrations in the vaginal secretions, and it might exert a protective effect on reducing the number of recurrent infections despite the fact that TMP-SMX-resistant organisms may be present in the vaginal and stool flora.

Prophylactic use of Sulfonamides

Cotrimoxazole & *P. jirovecii*

- TMP-SMX has been used successfully for primary and secondary chemoprophylaxis of *P. jirovecii* pneumonia, is highly cost-effective, and is generally selected as the first-line agent, but its long-term use may be limited by toxicities such as rash or leukopenia.

Prophylactic use of Sulfonamides

Cotrimoxazole & *P. jirovecii*

- All HIV-infected patients with a CD4+ count of 200 cells/mm³ or lower, thrush, or prior *P. jirovecii* pneumonia should be prophylaxed with TMP-SMX unless sulfa-allergic.

Prophylactic use of Sulfonamides

Cotrimoxazole & *P. jirovecii*

- Current guidelines suggest discontinuing primary prophylaxis for patients who have a sustained CD4+ count higher than 200 cells/mm³ for at least 3 months after the initiation of highly active antiretroviral therapy

Prophylactic use of Sulfonamides

Cotrimoxazole & *P. jirovecii*

- *P. jirovecii* pneumonia prophylaxis with TMP-SMX confers crossprotection against toxoplasmosis.
- TMP-SMX is the recommended prophylactic agent for toxoplasmosis for all patients with a CD4+ count lower than 100 cells/mm³ and a previous episode of toxoplasmic encephalitis.
- Dapsone is an effective alternative in patients with TMP-SMX allergy.

Prophylactic use of Sulfonamides

Cotrimoxazole & *P. jirovecii*

- TMP-SMX prophylaxis has been lifesaving when used in immunosuppressed AIDS patients in sub-Saharan Africa and is now the standard of care.
- TMP-SMX prophylaxis is moderately protective against malaria in HIV-exposed infants and HIV-infected children, as well as African children in areas with high levels of antifolate resistance.
- HIV-infected patients who discontinue TMP-SMX prophylaxis are at increased risk of malaria and diarrhea.

Prophylactic use of Sulfonamides

Cotrimoxazole & gram-negative rod

bacteremia in neutropenic patients

- In a more recent meta-analysis, TMP/SMX was effective in reducing gram-positive bacteremia in these patients.
- Oral prophylaxis with TMP-SMX may decrease the incidence of serious bacterial infections in patients with **multiple myeloma**. Concerns have been raised against the routine use of TMP-SMX prophylaxis in neutropenic patients because of increasing streptococcal resistance. Effective prophylactic use of TMP-SMX in chronic granulomatous disease has been reported.
- Twice-weekly TMP-SMX is effective *Pneumocystis* prophylaxis for leukemic children

Prophylactic use of Quinolones

Prophylaxis of anthrax

- Oral ciprofloxacin and levofloxacin are recommended for prophylaxis of anthrax, with potential similar efficacy and toxicity to doxycycline.

Prophylactic use of Quinolones

Prophylaxis of recurrent UTI in women

- Prophylaxis of recurrent UTI in women, **norfloxacin** (200 mg at bedtime) was highly effective and superior to nitrofurantoin,
- Low doses of **ofloxacin** (100 mg), norfloxacin (200 mg), and **ciprofloxacin** (125 mg) given after coitus have also been effective as prophylaxis.
- **Nitrofurantoin or TMP-SMX, are preferred** for this indication, however, because of expense and the risks of potential pregnancy.

Prophylactic use of Quinolones

Prophylaxis in urologic surgery

- Fluoroquinolones are now commonly used in **prophylaxis in urologic surgery**.
- When postoperative bacteriuria, but not other secondary outcomes, was the parameter to define efficacy of antimicrobial prophylaxis, single-dose ciprofloxacin (500 mg) or levofloxacin (500 mg) have been shown to be effective after transurethral prostate resection and transrectal prostate biopsies. but infections with quinoloner-resistant *E. coli* have been seen increasingly with this use.

Prophylactic use of Quinolones

Renal transplant

- Prophylaxis of urinary tract infection in renal transplant recipients is routinely done because of high risk from infection.
- Although ciprofloxacin is effective, TMP-SMX is often used because it may be additionally useful as prophylaxis against other opportunistic pathogens in this patient group.

Prophylactic use of Quinolones

Prophylaxis to travelers

- When given as prophylaxis to travelers, quinolones have produced protection rates ranging from 68% to 92% compared with those in placebo control subjects, but
- Routine use of quinolones or other antimicrobials is not recommended for prevention of diarrhea in travelers.

Prophylactic use of Quinolones

Prophylaxis to travelers

- Contingency treatment at the onset of diarrhea is preferred for travelers, and with this approach, norfloxacin (400 mg twice daily for 3 days) 200 and ciprofloxacin (500 mg single dose) were shown to shorten diarrhea by 1 to 3 days relative to placebo.

Prophylactic use of Quinolones

Prophylaxis to travelers

- The risks of selecting resistant enteric bacteria must also be considered before embarking on prolonged use of quinolones in prophylaxis.

Prophylactic use of Quinolones

Spontaneous bacterial peritonitis

- In patients with cirrhosis at high risk for recurrent spontaneous bacterial peritonitis, norfloxacin, 400 mg once daily, given as prophylaxis, reduced recurrences by threefold.
- Norfloxacin and ciprofloxacin were also studied for up to 1 year for the primary prophylaxis of spontaneous bacterial peritonitis among high-risk patients with low ascitic protein concentration.

Prophylactic use of Quinolones

Spontaneous bacterial peritonitis

- Prolonged use of norfloxacin was, however, later associated with increasing occurrence of quinolone-resistant bacteria; in this respect,
- It is interesting that the survival advantage was substantial at 3 months (94% vs. 62%; $P = .003$) but only 60% versus 48% by 1 year ($P = .05$).²⁶³

Prophylactic use of Quinolones

Spontaneous bacterial peritonitis

- Patients who have been on this prophylaxis and develop peritonitis should be treated with agents other than a fluoroquinolone because the risk of quinolone resistance is high in this group.

Prophylactic use of Quinolones

Cirrhosis and gastrointestinal bleeding

- **Primary prophylaxis had also been recommended for patients with cirrhosis and gastrointestinal bleeding** because in several studies, performed in the 1990s, that tested mainly quinolones, prophylaxis was efficacious in reducing the number of deaths and bacterial infections.

Prophylactic use of Quinolones

Cirrhosis and gastrointestinal bleeding

- In a more recent study, oral norfloxacin and intravenous ceftriaxone were compared for prophylaxis in 111 cirrhotic patients with gastrointestinal bleeding.
- Spontaneous bacteremia or bacterial peritonitis was higher in patients receiving norfloxacin.
- The risks of selecting resistant enteric bacteria must also be considered before embarking on prolonged use of quinolones in prophylaxis.

Prophylactic use of Quinolones

Anthrax

- Activity in vitro is excellent for a number of fluoroquinolones, and ciprofloxacin (500 mg PO twice daily) is the recommended regimen for cutaneous disease and prophylaxis after exposure to anthrax spores.

Prophylactic use of Quinolones

Neutropenic patients

- Oral **ciprofloxacin**, 500 mg twice daily; **ofloxacin**, 300 mg twice daily; and **norfloxacin**, 400 mg twice daily, given as prophylaxis in **neutropenic patients** have consistently reduced the occurrence of gram-negative bacteremia and, in some cases, prolonged the time to first fever, but breakthrough gram-positive bacteremias have occurred, particularly streptococcal bacteremias in bone marrow transplant recipients.

Prophylactic use of Quinolones

Neutropenic patients

- Ciprofloxacin and ofloxacin appear superior to norfloxacin, with lower rates of gram-negative and, in the case of ofloxacin, streptococcal bacteremias.
- **Addition of penicillin** to norfloxacin reduced breakthrough streptococcal bacteremias, and
- **Addition of rifampin** to ofloxacin reduced staphylococcal bacteremias.

Prophylactic use of Quinolones

Quinolone-resistant viridans streptococci

- Colonization and breakthrough bacteremias with quinolone-resistant **viridans streptococci** have also been reported when **levofloxacin** was used alone as prophylaxis in recipients of autologous stem cell transplants and hematologic malignancies.

Prophylactic use of Quinolones

Additional agents with activity against gram-positive

- Use of additional agents with activity against gram-positive pathogens in combination with fluoroquinolones in prophylaxis can **reduce gram-positive bacteremias** but is **less well tolerated**.
- In addition, breakthrough bacteremias with quinolone-resistant *E. coli* have occurred as well with fluoroquinolone prophylaxis.

Prophylactic use of Quinolones

Absolute neutrophil count \leq 100 cells/mm³

- IDSA guidelines recommend prophylaxis with ciprofloxacin or levofloxacin (the latter preferred in patients with increased risk of mucositis-related streptococcal bacteremia) in **high risk patients**, defined as having an expected absolute neutrophil count less than or equal to 100 cells/mm³ for greater than or equal to 7 days.

Prophylactic use of Quinolones

Quinolone resistance

- Patients who have received quinolone prophylaxis should not be treated with quinolones for fever and neutropenia because of the risk of quinolone resistance.

Prophylactic use of Unique Antibacterial Agents

- ABT-773/cethromycin
- Has FDA orphan drug status for prophylaxis in patients exposed to inhalational *Bacillus anthrax*, tularemia, and plague.

Prophylactic use of Urinary Tract Agent

Methenamine

- Is used only for the prophylaxis of urinary tract infections.

Prophylactic use of Urinary Tract Agent

Nitrofurantoin

- In young women with two or more episodes of symptomatic urinary tract infections within 12 months, nitrofurantoin (100 mg) was effective and
- Comparable to Cotrimoxazole in preventing further urinary tract infections.

Prophylactic use of Urinary Tract Agent

Nitrofurantoin

- In a more heterogeneous population, nitrofurantoin was equivalent to **cefactor** (250 mg at bedtime) or **norfloxacin** (200 mg at bedtime).
- Nitrofurantoin was slightly less well tolerated owing to **nausea**.

Prophylactic use of Urinary Tract Agent

Nitrofurantoin

- For women in whom recurrence of **infection is associated with sexual intercourse**, a single dose of nitrofurantoin (100 mg) taken shortly after intercourse has been effective in preventing symptomatic infection.
- Postcoital prophylaxis was also effective in **pregnant women** with a history of recurrent urinary tract infections before pregnancy.

Prophylactic use of Urinary Tract Agent

Nitrofurantoin

- **In postmenopausal women with recurrent urinary tract infections,** nitrofurantoin (100 mg every day) was more effective than an estriol-containing vaginal pessary in preventing symptomatic and asymptomatic bacteriuria.

Prophylactic use of Urinary Tract Agent

Nitrofurantoin

- Antimicrobial prophylaxis is not of value in **patients with long-term indwelling catheters.**

Prophylactic use of Urinary Tract Agent

Nitrofurantoin

- For prophylaxis for recurrent urinary tract infections, it is dosed at 50 to 100 mg once daily.
- The dose of the mixture of microcrystalline and macrocrystalline formulations (Macrobid) is 100 mg twice a day.

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Clean Wounds

- The use of topical antibacterials in chronic nonhealing, noninfected wounds, such as pressure ulcers, has been recommended by the U.S. Agency for Health Care Policy and Research.
- The goal of such therapy is to decrease the bacterial burden in these wounds and possibly to promote healing.

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Clean Wounds

- The chronic use of topical antibacterials may be expected to promote bacterial resistance and should be avoided.
- The use of topical antibacterials for chronic nonhealing wounds should be discouraged.

Prophylactic use of Topical Antibacterials

Prophylaxis of Recurrent Skin and Soft Tissue Infections

- Some patients with **recurrent furuncles**, carbuncles, and other skin and soft tissue infections caused by *S. aureus* may have persistent **nasal carriage** of this organism.
- It has been suggested that eradication of *S. aureus* from the nares could reduce the recurrence of these infections.

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Operative Wounds

- surgical site infections (SSIs) have become one of the most common HAIs.
- Most SSIs are caused by endogenous flora, including *S. aureus*.
- Estimates suggest *S. aureus* is the etiologic agent of 20% to 30% of all SSIs.

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Operative Wounds

- SSI prevention strategies have focused not only on proper skin site preparation and optimal management of the host but also on decolonization or decreasing the bioburden on the host's skin before the operative procedure.

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Operative Wounds

- Some guidelines do recommend use of mupirocin preoperative nasal decolonization in patients with known MRSA, who are undergoing cardiac surgery, joint replacement procedures, hip fracture repair, or spinal surgery.

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Operative Wounds

- In summary, decolonization as an SSI prevention strategy **should be considered for specific surgical** populations or in certain circumstances.
- **Decolonization may be appropriate for known MRSA carriers or in the case of the severely immunocompromised host.**
- Decolonization strategies appear to be reasonable, and perhaps cost-effective, when there is a high risk of devastating outcomes associated with SSI, such as in **neurosurgical, cardiac, or joint replacement procedures.**

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Operative Wounds

- Preoperative skin site preparation with CHG-alcohol preparations are superior to povidone-iodine.
- Chlorhexidinealcohol may be superior because CHG is not inactivated by blood or serum, as is povidone-iodine.

Prophylactic use of Topical Antibacterials

Prophylaxis of Vascular Catheter–Related Infections

- The use of topical antibacterial agents to prevent **vascular catheter–related infections** includes choice of appropriate skin site **antiseptic** preparation and the use of a **topical agent** applied to the catheter site as part of line site maintenance.

Prophylactic use of Topical Antibacterials

Prophylaxis of Vascular Catheter–Related Infections

- CHG-alcohol preparations as the preferred skin site antiseptic.
- After insertion, disinfecting catheter hubs, connectors without needles, and injection ports before accessing the catheter with an alcohol-chlorhexidine preparation or 70% alcohol to reduce contamination.

Prophylactic use of Topical Antibacterials

Prophylaxis of Dialysis Catheter Infections

- مطالعات متعدد ولي نتایج ??
- صفحه ۴۵۵ و ۴۵۶ حدود يك صفحه كامل كتاب

Prophylactic use of Topical Antibacterials

Prophylaxis of Health Care–Associated Infections

- Twenty percent of HAIs are acquired in the critical care setting, and risk of HAI increases with length of critical care stay.
- **The three most common critical care HAIs** are catheter associated urinary tract infection (CA-UTI), CLA-BSI, and ventilator-associated lower respiratory tract infections.

Prophylactic use of Topical Antibacterials

Prophylaxis of Health Care–Associated Infections

- Recently, the use of daily CHG bathing has been proved to be an effective method of reducing both the development of HAIs and preventing colonization of critical care patients with multidrug-resistant organisms.

تقریباً يك صفحه كامل كتاب ص ٤٥٧

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Burn Wounds

- Frequent **débridement** and the establishment of an epidermis, or a surrogate such as a **skin graft** or **skin substitute**, are essential for the prevention of infection.

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Burn Wounds

- There is evidence that effective topical antibacterial therapy **delays colonization** of the burn wound for a variable period, **maintains the bacterial density of the wound at lower levels** than those which could otherwise be achieved and for appreciable intervals (measured in weeks), and tends to result in a **relatively homogeneous and less diverse wound flora** than that which would otherwise be expected.

Prophylactic use of Topical Antibacterials

Prophylaxis of Infection in Burn Wounds

- The specific antimicrobial agent chosen for topical therapy should have a broad in vitro spectrum of activity against gram-positive cocci (staphylococci, streptococci, and enterococci) and the aerobic gram-negative flora (including *Pseudomonas aeruginosa*).

Prophylactic use of Topical Antibacterials

Mupirocin

- Mupirocin is used primarily in skin infections, such as impetigo and folliculitis, which are usually caused by *S. aureus* and *S. pyogenes*, to decolonize the nares in outbreak settings and as prophylaxis against a variety of catheter-related and surgical site infections.

Prophylactic use of Antimycobacterial Agents

Azithromycin, Dapsone

- For disseminated *M. avium* prophylaxis, the dosage of **azithromycin** is 1200 mg once a week.
- **Dapsone** is now being used in AIDS patients as prophylaxis and treatment of *Pneumocystis jirovecii* pneumonia.

Prophylactic use of Drugs Active against Fungi ..

Itraconazole

- Itraconazole suspension may be useful for prophylaxis against fungal infections during neutropenia, and possibly reduced the rate of invasive aspergillosis

Prophylactic use of Drugs Active against Fungi ..

Fluconazole

- Neonatal units might consider use of fluconazole prophylaxis in addition to standard infection control procedures for very-low-birth-weight neonates.

Prophylactic use of Drugs Active against Fungi ..

Prophylaxis in Neutropenic Patients

- In a multicenter trial, administration of fluconazole, 400 mg daily, decreased the incidence of death from deep mycoses in bone marrow transplant recipients, most of whom had received allogeneic transplants

۳۰ - پروفیلاکسی با فلوکونازول به مقدار ۲۰۰ تا ۴۰۰ میلی گرم یک بار در هفته باعث کاهش میزان بروز کدامیک از بیماری‌های زیر میشود؟

الف) کاندیدیازس مری در زمینه عفونت HIV

ب) کاندیدیازیس واژن

ج) کریپتوکوکوزیس

د) هیستوپلاسمازموزیس

Prophylactic use of Drugs Active against Fungi ..

Prophylaxis in Patients with AIDS

- **Fluconazole**, 200 or 400 mg once per week, has reduced the incidence of **oral** and **vulvovaginal** candidiasis in patients with advanced HIV infection, but this regimen has not been demonstrated to prevent histoplasmosis, cryptococcosis, or esophageal candidiasis in this population.

فلوکونازول یک بار در هفته؟

۳۱ - پروفیلاکسی با فلوکونازول به مقدار ۲۰۰ میلی گرم
یک بار در روز باعث کاهش بروز کدامیک بیماری‌های
زیر میشود؟

الف) کاندیدیازیس مری

ب) کاندیدیازیس فارنژ

ج) کریپتوکوکوزیس

د) تمام موارد فوق

Prophylactic use of Drugs Active against Fungi ..

Prophylaxis in Patients with AIDS

- Fluconazole, Prophylaxis with 200 mg daily does reduce the incidence of oropharyngeal and esophageal candidiasis, as well as cryptococcosis in patients with a CD4 count of less than 200/mm³.

فلوکونازول یک بار در روز؟

Prophylactic use of Drugs Active against Fungi ..

Prophylaxis in Patients with AIDS

- Fluconazole is an **alternative** to **itraconazole** for maintenance therapy in **AIDS** patients with prior disseminated histoplasmosis.

-

Prophylactic use of Drugs Active against Fungi ..

Prophylaxis in Preterm Neonates

- **Fluconazole** at 3 to 6 mg/kg (every third day for first 2 weeks of life, then every day) until day 30 of life (neonates weighing 1000 to 1500 g at birth) or day 45 (neonates weighing <1000 g at birth) reduced the rate of invasive candidal infection from 13% (placebo) to 2.7% (6-mg group) and 3.8% (3-mg group) in a randomized multicenter study of 322 evaluable infants.,

Prophylactic use of **Drugs Active against Fungi** ..

Posaconazole

- Is indicated for prophylaxis of invasive fungal infection during neutropenia or moderate-to-severe graft-versus-host disease (GVHD).
- When used in this setting, posaconazole may be dosed either as the suspension (200 mg [5 mL] three times daily) or as the tablets (three 100-mg tablets given twice on day 1 and then once daily thereafter).

Prophylactic use of **Drugs Active against Fungi** ..

Posaconazole

- **Of Invasive Fungal Infection during Periods of Very High Risk.** Posaconazole decreases the incidence of fungal infections in high-risk patients during GVHD associated with allogeneic bone marrow transplantation or the neutropenic period associated with myelosuppressive chemotherapy for acute myelogenous leukemia or myelodysplastic syndrome.

Prophylactic use of **Drugs Active against Fungi** ..

Posaconazole

- Marrow transplantation or the neutropenic period associated with myelosuppressive chemotherapy for acute myelogenous leukemia or myelodysplastic syndrome.

Prophylactic use of Drugs Active against Fungi ..

Pentamidine

- Although often supplanted by easier oral therapies, pentamidine can also be used for prophylaxis.
- For this indication, it is available as a 300-mg unit-dose powder for reconstitution in 6 mL sterile water.
- Given by nebulizer
- The recommended dosage is 300 mg once every 4 weeks.
- The protective effect is limited to the lung.

Prophylactic use of ~~Drugs Active against Fungi ..~~

Candidal Infections in Hematopoietic Stem Cell Transplant Recipients

- **Micafungin** is registered for use at 50 mg/day during the at-risk period after hematopoietic stem cell transplantation. In this study, micafungin was compared with fluconazole (400 mg/day).

AGENTS USED TO TREAT AND PREVENT PNEUMOCYSTIS JIROVECHII

Co-tromoxazole

- The standard prophylaxis regimen in at-risk HIV-infected adults is one double-strength tablet of TMP-SMX (160 mg and 800 mg of the two components, respectively) daily.²⁴⁵ Also effective, and perhaps better tolerated, is a reduced dosage of one single-strength tablet daily or one double-strength tablet three times weekly.

۳۲ - در مناطق آندمیک مالاریای مقاوم به کلروکین،
کمپروپروفیلاکسی با کلیه داروهای زیر، توصیه شده است
بجز؟

- الف) مفلوکین هفته ای یک بار
- ب) داکسی سیکلین روزی یک بار
- ج) آتوواکان - پروگوانیل، روزی یک بار
- د) کلروکین روزی دو بار

۳۳ - کلروکین در تمامی گونه‌های انگل مالاریا به منظور درمان و پروفیلاکسی به عنوان داروی انتخابی در نظر گرفته میشود بجز؟

الف) فالسیپاروم

ب) مالاریه

ج) ویواکس

د) اواله

Prophylactic use of Drugs Active against Malaria

General principles

- **Chloroquine prophylaxis** once weekly is used in areas without chloroquine-resistant *falciparum* malaria.
- Prophylaxis against **chloroquine-resistant falciparum** malaria includes:
 - once-weekly **mefloquine**
 - once-daily **doxycycline**, or
 - once-daily **atovaquone-proguanil** (Malarone).

Prophylactic use of Drugs Active against Malaria

Primaquine

- Primaquine can be used for prophylaxis during travel or used after return from malarious areas to lessen incidence of recurrent vivax malaria.

Prophylactic use of Drugs Active against Malaria

Chloroquine

- Chloroquine remains the drug of choice for both prophylaxis and treatment of the non-falciparum malarias,
- This is under threat for *P. vivax* due to an increasing prevalence of chloroquine resistance in this species

Prophylactic use of Drugs Active against Malaria

Chloroquine

- Chloroquine is safe in **nursing mothers**.
- When used for prolonged periods (>5 years prophylaxis), the cumulative accumulation can cause retinal damage, and regular **ophthalmologic examination** is appropriate if long-term therapy is undertaken.

۳۴ - مرد ۳۰ ساله ای که در یک منطقه مالاریا خیز، تحت پوشش پروفیلاکسی با مفلوکین است دچار بی قراری حاد، افسردگی، اضطراب و گیجی گردیده است، کدامیک از اقدامات زیر را برای وی انجام می‌دهید؟

الف) قطع کامل مفلوکین

ب) افزایش فاصله دوزهای بعدی دارو

ج) کاهش دارو به نصف مقدار قبلی

د) اندازه گیری سطح سرمی دارو

۳۵ - مسمومیت عصبی - روانی، که گاهی ممکن است
تهدید کننده حیات نیز باشد در رابطه با کدامیک از
داروهای ضد مالاریا گزارش شده است؟

الف) کلروکین

ب) پریماکین

ج) مفلوکین

د) آتوواکان - پروگوانیل

Prophylactic use of Drugs Active against Malaria

Mefloquine

- **Mefloquine** is indicated for the treatment and prophylaxis of malaria, including **chloroquine-resistant strains**.
- The most serious adverse effect of mefloquine is **neuropsychiatric toxicity**.
- This can develop at any time during prophylaxis or treatment, and symptoms range from mild to **life threatening**.
- If acute anxiety, depression, restlessness, or confusion develops during prophylaxis, the drug should be **discontinued**.

۳۶ - خانم ۳۰ ساله ای که از مدتی قبل تحت پوشش پروفیلاکسی با مفلوکین بوده است در روز جاری مشخص شده است که دو ماهه باردار می‌باشد. با توجه به ممنوعیت مصرف این دارو در دوران بارداری، کدامیک از اقدامات زیر را انجام می‌دهید؟

الف) ختم حاملگی با توجه به زمان بارداری

ب) قطع کامل دارو بدون هیچ اقدام دیگر

ج) کاهش دوز دارو به نصف مقدار قبلی

د) اندازه گیری سطح سرمی دارو

Prophylactic use of Drugs Active against Malaria

Mefloquine

- Although mefloquine prophylaxis is not recommended during pregnancy, the drug is probably safe and effective and discovery of pregnancy during mefloquine prophylaxis is not an indication for pregnancy termination.

۳۷ - پایداری پپراکین در بدن، منطبق بر کدامیک از ارقام زیر است؟

الف) یک هفته

ب) دو هفته

ج) سه هفته

د) چهار هفته

Prophylactic use of Drugs Active against Malaria

Piperaquine

- The prolonged half-life results in a beneficial post-treatment prophylactic period, estimated to be about 20 days, and protects against both *P. vivax* and *P. falciparum*.

Prophylactic use of Drugs Active against Malaria

Primaquine

Primaquine has three main clinical applications:

1. The radical cure of *P. vivax* and *P. ovale* infection,
2. Causal prophylaxis, and
3. The reduction of *P. falciparum* transmission.

Prophylactic use of Drugs Active against Malaria

Primaquine

- The activity of primaquine activity against all species of plasmodia makes it a useful agent for prophylaxis.
- For this indication a daily dose of 0.5 mg/kg (equivalent to an adult dose of 30 mg base) is well tolerated and effective.

۲۸ - کدامیک از داروهای ضد مالاریای زیر، همچون پریماکین بر هیپنوزوئیت‌های انگل مالاریا موثر است و تاثیر پروفیلاکتیک آن در انواع مختلف مالاریا ده برابر پریماکین است؟

الف) پپراکین

ب) تافنوکین

ج) مفلوکین

د) داکسی سیکلین

Prophylactic use of Drugs Active against Malaria

Tafenoquine

- Like primaquine, tafenoquine has clinically useful activity against hypnozoites, and as a causal prophylactic.
- Tafenoquine is approximately 10 times more potent than primaquine when used as a causal prophylactic in rhesus monkeys.

Prophylactic use of Drugs Active against Malaria

Proguanil

- Proguanil is now almost exclusively used with atovaquone for malaria chemoprophylaxis

Prophylactic use of Drugs Active against Malaria

Proguanil

- A single dose of atovaquone-proguanil results in prophylaxis of sufficient duration o suggest that a weekly dosing schedule may be sufficient.

۲۹ - آگرانولوسیتوز، جزو عوارض شایع کدامیک از داروهای ضد مالاریا است و باعث شده است دیگر به عنوان کموپروپیلاکسی مالاریا مصرف نشود؟

الف) داپسون همراه با پریمتامین

ب) آتوواکان همراه با پروگوانیل

ج) مفلوکین

د) تافونوکین

Prophylactic use of Drugs Active against Malaria

Dapson & pyrimethamine

- **Agranulocytosis** has been commonly reported among individuals taking **dapsone with pyrimethamine** for malaria prophylaxis.
- For this reason, this combination was **removed** from recommendations for malaria chemoprophylaxis.

Prophylactic use of Drugs Active against Malaria

Doxycycline

- **Daily** doxycycline is a preferred prophylactic regimen for malaria.

TABLE 276-4 Malaria Chemoprophylaxis

DRUG	ADULT DOSE	PEDIATRIC DOSE	PRECAUTIONS
Areas with Chloroquine-Sensitive Malaria			
Chloroquine Phosphate (Aralen, Generics)			
Supplied in 300-mg base tablets	300 mg base once weekly ^b	5 mg/kg base once weekly, up to the maximum adult dose of 300 mg base ^b	Drug accumulation from prolonged use or inadvertent daily dosing may cause retinopathy.
Areas with Mefloquine-Sensitive Malaria			
Mefloquine (Lariam, Generics)			
Supplied in 250-mg salt tablets	250 mg salt once weekly ^c	Dosed according to body weight: ≤9 kg: 5 mg/kg salt once weekly 10-19 kg: ¼ tablet once weekly 20-30 kg: ½ tablet once weekly 31-45 kg: ¾ tablet once weekly >45 kg: 1 tablet once weekly ^c	Do not use in individuals with cardiac conduction abnormalities, history of seizures, or serious psychiatric illnesses (e.g., psychosis, major depression). Do not use concomitantly with quinidine, quinine, or halofantrine. Do not use in first trimester of pregnancy.
All Areas			
Atovaquone-Proguanil (Malarone)			
Supplied in fixed-combination tablets containing 250 mg atovaquone and 100 mg proguanil (adult tablet) or 62.5 mg atovaquone and 25 mg proguanil (pediatric tablet)	1 adult tablet daily ^d	Dose per body weight: 5-8 kg: ½ pediatric tablet daily 9-10 kg: ¾ pediatric tablet daily 11-20 kg: 1 pediatric tablet daily 21-30 kg: 2 pediatric tablets daily 31-40 kg: 3 pediatric tablets daily >40 kg: 1 adult tablet daily ^d	Take with food or whole milk. Not recommended for children weighing <5 kg, pregnant women, or women who breastfeed children weighing <5 kg. Contraindicated in individuals with severe renal impairment.
Doxycycline			
Supplied in 100-mg tablets	100 mg daily ^e	Children ≥8 yr old: 2.2 mg/kg up to maximum adult dose of 100 mg daily ^e	Do not use doxycycline in children <8 yr old or in pregnant women.
Areas with Mostly <i>P. vivax</i>			
Primaquine Phosphate			
Supplied in 15-mg base tablets	30 mg base daily ^f	0.5 mg/kg base up to maximum adult dose of 30 mg base daily ^f	Recommended for short-duration travel only. Contraindicated in individuals with G6PD deficiency and pregnant women. Also contraindicated in women who breastfeed, unless the infant being breastfed has a normal G6PD level.

^aWhen several different drugs are recommended for an area, this table might help in the decision-making process: see <http://www.cdc.gov/malaria/travelers/drugs.html>.

^bBeginning 1-2 weeks before travel and continuing *weekly* for 4 weeks after leaving a malarious area.

^cBeginning 2-3 weeks before travel and continuing *weekly* for 4 weeks after leaving a malarious area.

^dBeginning 1-2 days before travel and continuing *daily* for 7 days after leaving a malarious area.

^eBeginning 1-2 days before travel and continuing *daily* for 4 weeks after leaving a malarious area.

^fBeginning 1-2 days before travel and continuing *daily* for 7 days after leaving a malarious area.

G6PD, glucose-6-phosphate dehydrogenase.

Drug regimens modified from Centers for Disease Control and Prevention. Drugs for Prevention. Available at <http://www.cdc.gov/malaria>.

DRUG**ADULT DOSE****PEDIATRIC DOSE****Areas with Chloroquine-Sensitive Malaria*****Chloroquine Phosphate (Aralen, Generics)***

Supplied in 300-mg base tablets

300 mg base once weekly^b5 mg/kg base once weekly, up to the maximum adult dose of 300 mg base^b**Areas with Mefloquine-Sensitive Malaria*****Mefloquine (Lariam, Generics)***

Supplied in 250-mg salt tablets

250 mg salt once weekly^cDosed according to body weight:
≤9 kg: 5 mg/kg salt once weekly
10-19 kg: ¼ tablet once weekly
20-30 kg: ½ tablet once weekly
31-45 kg: ¾ tablet once weekly
>45 kg: 1 tablet once weekly^c**All Areas*****Atovaquone-Proguanil (Malarone)***

Supplied in fixed-combination tablets containing 250 mg atovaquone and 100 mg proguanil (adult tablet) or 62.5 mg atovaquone and 25 mg proguanil (pediatric tablet)

1 adult tablet daily^dDose per body weight:
5-8 kg: ½ pediatric tablet daily
9-10 kg: ¾ pediatric tablet daily
11-20 kg: 1 pediatric tablet daily
21-30 kg: 2 pediatric tablets daily
31-40 kg: 3 pediatric tablets daily
>40 kg: 1 adult tablet daily^d

Doxycycline

Supplied in 100-mg tablets

100 mg daily^e

Children ≥ 8 yr old: 2.2 mg/kg up to maximum adult dose of 100 mg daily^e

Areas with Mostly *P. vivax*

Primaquine Phosphate

Supplied in 15-mg base tablets

30 mg base daily^f

0.5 mg/kg base up to maximum adult dose of 30 mg base daily^f

^aWhen several different drugs are recommended for an area, this table might help in the decision-making

^bBeginning 1-2 weeks before travel and continuing *weekly* for 4 weeks after leaving a malarious area.

^cBeginning 2-3 weeks before travel and continuing *weekly* for 4 weeks after leaving a malarious area.

^dBeginning 1-2 days before travel and continuing *daily* for 7 days after leaving a malarious area.

^eBeginning 1-2 days before travel and continuing *daily* for 4 weeks after leaving a malarious area.

^fBeginning 1-2 days before travel and continuing *daily* for 7 days after leaving a malarious area.

G6PD, glucose-6-phosphate dehydrogenase.

Prophylactic use of Drugs for Protozoal Infections

Pentamidine

- **Pentamidine** is a second-line drug for prophylaxis and treatment of *Pneumocystis pneumonia*.
- Use as secondary prophylaxis for **VL** in immunocompromised patients has been reported in a small number of patients.

Prophylactic use of Drugs for Helminths

Diethylcarbamazine (DEC)

- **Monthly** administration is known to be an effective chemoprophylactic agent for **bancroftian filariasis** and **loiasis**.
- Diethylcarbamazine (DEC).

Prophylactic use of Drugs for Viruses

General principles

- Antiviral prophylaxis and preemptive therapy have become standard practice in immunocompromised patients, such as hematopoietic stem cell and solid-organ transplant recipients.

۳۸ - کلیه مطالب زیر در مورد کمپروپیلاکسی با Oseltamivir علیه آنفلوآنزا صحیح است بجز؟

- الف) باعث کاهش موارد علامت دار بیماری میشود
- ب) کفایت این دارو در دریافت کنندگان پیوند کلیه ۸۰٪ است
- ج) باعث کاهش عوارض ثانویه بیماری میشود
- د) از وقوع عفونت بدون علامت، جلوگیری می کند

Prophylactic use of Drugs for Influenza

Oseltamivir

- Prophylactic administration of once-daily oral oseltamivir (75 mg) is highly effective in reducing the risk for developing febrile illness during influenza season in unimmunized adults.
- Prevention of influenza may reduce secondary complications in institutionalized older adults.

Prophylactic use of Drugs for Influenza

Oseltamivir

- Once-daily oseltamivir for 7 to 10 days is also effective for **postexposure prophylaxis** in household contacts, including children, and when ill index cases receive concurrent treatment.
- Oseltamivir chemoprophylaxis has been used to control **institutional outbreaks** of influenza A continuing despite M2 inhibitor use and of **influenza B**.

Prophylactic use of Drugs for Influenza

Zanamivir

- Prophylactic administration of once-daily inhaled zanamivir (10 mg) prevents febrile influenza illness during influenza season (84% efficacy), or when used for
- Postexposure prophylaxis in households with or without treatment of the ill index case (82% efficacy).
- In an observational study with limited numbers of patients, orally inhaled zanamivir and oral oseltamivir were not different for prevention of secondary cases during nosocomial outbreaks on pediatric wards.



Prophylactic use of Drugs for Influenza

Zanamivir

- In nursing home residents, 2 weeks of inhaled zanamivir was superior to oral rimantadine in preventing influenza A infection, in part because of a high frequency of rimantadine resistance, and inhaled zanamivir has been used to curtail transmission of amantadine-resistant influenza A in nursing homes.

۳۹ - در کدامیک از موارد زیر کمپروپیلاکسی کوتاه مدت با آسیکلوویر باعث کاهش میزان عودهای بعدی عفونت ناشی از هرپس سیمپلکس تایپ ۱ می‌شود؟

الف) عود ضایعات مرتبط با تابش آفتاب

ب) عود تبخال لب‌ها

ج) عود بیماری چشمی

د) عود هرپس انگشتان (Whitlow)

۴۰ - در کلیه عفونت‌های هرپسی زیر، تاثیر کمپروپیلاکسی طولانی مدت با آسیکلوویر به اثبات رسیده است بجز؟

الف) پیشگیری از عفونت اولیه در مهد کودکها

ب) پروپیلاکسی بعد از تماس

ج) اریتم مولتی فرم مرتبط با هرپس

د) هرپس انگشتان

Prophylactic use of Drugs for Herpes viruses

Acyclovir & Valacyclovir

کمپروپیلاکسی طولانی مدت

- **Long-term suppression** may be useful in other patients with disabling recurrences of herpes whitlow or HSV-related erythema multiforme.
- In patients with recurrent herpes labialis or ocular HSV disease, prolonged oral acyclovir (400 mg twice daily) or valacyclovir (500 mg once daily) reduces the number of recurrences by about half.
- In patients with a **history of sun-induced recurrences**, short-term prophylaxis (400 to 800 mg twice daily) inconsistently reduces the risk for recurrence.

۴۱ - طی طغیان عفونت ناشی از ویروس هرپس تایپ
۱ در یکی از مهد کودک‌ها به منظور پیشگیری از وقوع
عفونت در کودکان تماس یافته چه اقدامی انجام
می‌دهید؟

الف) تجویز کوتاه مدت آسیکلوویر

ب) آسیکلوویر + واکسن

ج) واکسن به تنهایی

د) هیچکدام

Prophylactic use of Drugs for Herpes viruses

Prophylaxis during outbreaks

کمپروپیلاکسی در کودکان تماس یافته

- Short-term prophylaxis during outbreaks in daycare centers may be effective in preventing primary infections in children, but the efficacy of postexposure prophylaxis remains to be established.

۴۲ - طی طغیان آبله مرغان در یکی از مهد کودک‌ها به منظور پیشگیری از وقوع عفونت در کودکان حساس تماس یافته و نهایتاً جهت کاهش بروز عفونت در تماس‌های خانوادگی، کدامیک از اقدامات زیر را انجام می‌دهید؟

الف) آسیکلوویر

ب) واکسن و ریسلا

ج) آسیکلوویر + واکسن

د) هیچکدام

Prophylactic use of Drugs for Varicella

Acyclovir & Varicella

- **Postcontact prophylaxis** with oral **acyclovir** (40 mg/kg daily in divided doses), beginning **9 to 11 days** after exposure, may reduce the risk for varicella in household contacts.

Prophylactic use of Drugs for CMV

Valacyclovir & CMV

- High-dose **valacyclovir** prophylaxis (2 g four times a day for 90 days) reduces the risk for **CMV disease** and of **graft rejection** in **renal transplant** recipients, including CMV seronegative recipients of seropositive grafts, and
- Seems to be effective in preventing CMV reactivation **after heart transplantation..**

تأثير والاسيكلووير بر پيوند كليہ و قلب؟

Prophylactic use of Drugs for CMV

Ganciclovir & CMV

تأثير بر پیوند قلب، ریه و کبد؟

- Short-term **Ganciclovir** administration after transplantation reduces the risk for CMV disease in **seropositive allograft recipients** undergoing heart, lung, or liver transplantation.
- More prolonged administration provides more sustained protection, but breakthrough CMV infection, toxicity and resistance can limit its utility.

۴۳ - به منظور پیشگیری از وقوع عفونت‌های CMV در
زمینه پیوند ریه، کدامیک از رژیم‌های دارویی زیر توصیه
شده است؟

- الف) آسیکلوویر به مدت ۵ سال
- ب) والاسیکلوویر به مدت ۱۰ سال
- ج) گان‌سیکلوویر تا پایان عمر
- د) تمام موارد فوق قابل توصیه است

Prophylactic use of Drugs for CMV

Ganciclovir & CMV

- In lung transplant recipients, extended ganciclovir prophylaxis was associated with less **bronchiolitis obliterans** and improved survival.
- **24 weeks** prophylaxis in **renal transplant recipients** was more effective than **12 weeks** prophylaxis in reducing symptomatic CMV disease.
- Indefinite prophylaxis is now recommended in **lung transplant** recipients.

۴۴ - تاثیر کدامیک از داروهای ضد ویروس بر کاهش عفونت‌های CMV بعد از پیوند قلب، کبد، کلیه، ریه و مغز استخوان، به اثبات رسیده است؟

الف) آسیکلوویر

ب) گان سیکلوویر

ج) والاسیکلوویر

د) تمام موارد فوق

Prophylactic use of Drugs for CMV

Ganciclovir & CMV & Liver transplant

- Oral ganciclovir (1 g three times daily to day 98) prophylaxis markedly reduces the risk for invasive CMV disease in **liver transplant** recipients, including the high-risk group comprising **seronegative** recipients of **seropositive** donors' organs.

پیوند کبد؟

Prophylactic use of Drugs for CMV

Ganciclovir & CMV & Renal transplant

- Ganciclovir prophylaxis (1 g three times daily for 12 weeks) is also effective in **renal transplant** recipients.

پیوند کلیه؟

Prophylactic use of Drugs for CMV

Ganciclovir & CMV & Liver transplant

- Preemptive therapy with oral ganciclovir (1 g three times daily for 8 weeks) when CMV DNA is detectable protects against CMV disease in **liver transplant** recipients.

پیوند کبد؟

Prophylactic use of Drugs for CMV

Ganciclovir & CMV & Bone marrow transplant

- Intravenous ganciclovir prophylaxis seems to be effective and reasonably well tolerated in preventing CMV disease in **bone marrow** and **solid-organ** transplant recipients.

پیوند مغز استخوان؟

۴۵ - تاثیر پروفیلاکتیک آئروسول انترفرون آلفای داخل بینی در کدامیک از موارد زیر به اثبات رسیده است؟

الف) آنفلوآنزای A

ب) آنفلوآنزای B

ج) سرماخوردگی رینوویروسی

د) سرماخوردگی کرونا ویروسی

Prophylactic use of Interferons

Intranasal IFN- α

- Under natural conditions, prophylactic **intranasal IFN- α** is protective only against **rhinovirus colds**, however
- Long-term use is limited by the occurrence of nasal side effects.
- Intranasal IFN- α is ineffective in treating rhinovirus colds.

Prophylactic use of Alternative Med.

Vitamin A

- **Vitamin A prophylaxis** of Indonesian children every 4 months for 2 years resulted in a **rise in acute lower respiratory disease** compared with placebo (RR, 1.39%; 95% CI, 1.003 to 1.931);
- Vitamin A supplementation of U.S. children with confirmed respiratory syncytial virus (RSV) infection had slightly longer hospital stays than placebo controls (5.0 vs. 4.4 days; $P = .01$);

تأثیر داروهای سنتی نظیر ویتامین A، روی و ...؟

Prevention of Acute Otitis Media (AOM)

Prevention of Acute Otitis Media

- **Prevention of severe and recurrent episodes of AOM includes:**
 1. Chemoprophylaxis,
 2. Vaccination,
 3. Surgery.

Prevention of Acute Otitis Media

- **Chemoprophylaxis** may be of value for prevention of episodes of AOM in children with **severe and recurrent disease**.
- **Pneumococcal conjugate vaccines** have been effective in reducing episodes of AOM due to vaccine serotypes.
- **Influenza virus vaccines** reduce the incidence of AOM during the winter respiratory season.

Prevention of Acute Otitis Media

1. Chemoprophylaxis

- Chemoprophylaxis should be considered only for children with severe and recurrent infections.
- Children should be considered for prophylaxis if they have had two episodes of AOM in the first 6 months of life or, in older children, three episodes in 6 months or four episodes in 1 year.

۴۸ - کلیه مطالب زیر در مورد کمپروپروفیلاکسی AOM (اتیت حاد میانی) صحیح است بجز؟

- الف) در کودکانی مجاز است که دچار عفونتهای شدید و عودکنندهای هستند
ب) در صورتی که در کودکان بزرگتر، طی شش ماه گذشته، سه بار با عود
بیماری شدید، مواجه شده باشند
ج) آموکسی سیلین به مقدار ۴۰-۲۰ میلی گرم / کیلوگرم / روز داروی
مناسبی است
د) کودکانی که تحت پوشش کمپروپروفیلاکسی قرار می گیرند باید هفته‌ای
یکبار از نظر تجمع مایع در گوش میانی معاینه شوند

Prevention of Acute Otitis Media

1. Chemoprophylaxis

- Amoxicillin, 20 to 40 mg/kg, or sulfisoxazole, 50 mg/kg, may be administered once daily.
- Chemoprophylaxis may suppress symptoms of otitis media, but asymptomatic middle ear effusion may persist.
- The physician who chooses to use chemoprophylaxis to prevent acute recurrent disease must examine the patient at approximately 1-month intervals for middle ear effusion.

Prevention of Acute Otitis Media

1. Chemoprophylaxis

- Because of concern for development of **multidrug-resistant bacteria** in patients receiving chemoprophylaxis, the 2013 guidelines of the AAP and the AAFP discourage chemoprophylaxis.
- **The guidelines suggest prevention by placement of tympanostomy tubes**, although it necessitates a surgical procedure and anesthesia.

۴۶ - والدین کودک ۲ ساله‌ای که دچار عفونت‌های حاد مکرر و شدید گوش میانی (AOM) است در خصوص پیشگیری از حملات بعدی این بیماری با شما مشورت می‌نمایند. کدامیک از اقدامات زیر را به آنان توصیه می‌کنید؟

الف) کمپروپرفیلاکسی با آموکسی سیلین به مقدار ۴۰ میلی گرم / کیلوگرم
ب) واکسیناسیون با واکسن هفت ظرفیتی یا سیزده ظرفیتی پنوموکوک کونژوگه
ج) عمل جراحی تمپانوپلاستی

د) شرح محاسن و معایب روشهای مختلف برای والدین و تصمیم گیری براساس نظر آنها

۴۷ - کلیه مطالب زیر در مورد کمپروفیلاکسی AOM (اتیت حاد میانی) صحیح است بجز؟

- الف) در کودکانی مجاز است که دچار عفونتهای شدید و عودکننده‌ای هستند
- ب) در صورتی که طی یکسال گذشته، دو بار با عود بیماری شدید، مواجه شده باشند
- ج) سولفامتوکسازول به مقدار ۵۰ میلی گرم / کیلوگرم / روز داروی مناسبی است
- د) کودکانی که تحت پوشش کمپروفیلاکسی قرار می‌گیرند باید ماهی یکبار از نظر تجمع مایع در گوش میانی معاینه شوند

Prevention of Acute Otitis Media

1. Chemoprophylaxis

- Physicians must discuss with the parent the risk-benefit ratio of antibiotic prophylaxis versus surgery for prevention of further severe AOM.

Prevention of Acute Otitis Media

2. Pneumococcal Vaccines

- Children younger than 2 years of age had unsatisfactory responses to single-dose regimens, and the vaccine was of limited efficacy in prevention of AOM.
- A **sevenvalent conjugate pneumococcal polysaccharide vaccine**, using a diphtheria toxin mutant (CRM 197) as the protein carrier was approved by the FDA in February 2000.
- The vaccine (PCV7) combined pneumococcal serotypes 4, 6B, 9V, 14, 18C, 19F, and 23F and was demonstrated to be immunogenic in children as young as 2 months of age.

Prevention of Acute Otitis Media

2. Pneumococcal Vaccines

- **Antibody titers** that were protective for prevention of invasive disease were achieved after doses administered at **2, 4, and 6** months but **waned** during the next 6 months, requiring a **booster** between the ages of 12 and 15 months.

Prevention of Acute Otitis Media

تائير واكسن بر AOM ؟

2. Pneumococcal Vaccines

- The results were **more modest** for prevention of AOM.
- The vaccine reduced the number of episodes of AOM by 7% and reduced the number of procedures for **placement of ventilating tubes by 23%**, as a reflection of recurrent episodes requiring placement of tubes.
- Data suggested that the **vaccine was successful in reducing carriage of vaccine serotypes** but that pneumococcal carriage was replenished with nonvaccine serotypes, which subsequently spread from the upper respiratory tract to the middle ear to cause AOM.

Prevention of Acute Otitis Media

تأثير واکسن بر AOM ؟

2. Pneumococcal Vaccines

- The 13-valent conjugate pneumococcal vaccine (Prevnar 13) was introduced in 2010 and replaced PCV7 in the United States.
- In addition to the serotypes in PCV7, the additional serotypes, including types 1, 3, 5, 6A, 7V, and 19A were added.
- **There are no data, as of May 2013, to assess the efficacy of PCV13 for prevention of AOM caused by the additional serotypes.**

Prevention of Acute Otitis Media

3. Surgical management

- Surgical management of recurrent episodes of AOM and persistent effusion of the middle ear includes use of myringotomy, adenoidectomy, and the placement of tympanostomy tubes.

۴۹ - کودک سه ساله‌ای که دچار مننژیت هموفیلوسی بوده است در صورتی که با کدامیک از داروهای زیر درمان شده باشد در پایان درمان، باید تحت پوشش پروفیلاکسی با ریفامپین نیز قرار گیرد؟

الف) سفتریاکسون

ب) سفوتاکسیم

ج) سولباکتام - آمپی سیلین

د) هیچکدام

Prevention of *H. influenzae* type b

Prevention of *H. influenzae*

“Terminal prophylaxis”

- When the index child with invasive *H. influenzae* type b epiglottitis is treated with ceftriaxone or cefotaxime, colonization is successfully eliminated, such that the ill child does not require rifampin therapy.
- However, children who are treated with ampicillin-sulbactam or other agents will require “terminal prophylaxis” with rifampin at the end of their primary treatment, to prevent reintroduction of the organism into the household.

Prevention of Acute Exacerbations of COPD

۵۰ - طبق مطالعات انجام شده، بر تاثیر پروفیلاکتیک کدامیک از آنتی بیوتیک‌های زیر در پیشگیری از حملات مجدد COPD و بستری شدن آنها در بیمارستان، تاکید شده است؟

الف) سفالوسپورین‌های نسل اول

ب) سفالوسپورین‌های نسل دوم

ج) ماکرولیدها

د) سولفامیدها

Acute Exacerbations of COPD

Chemoprophylaxis

- **Azithromycin** have been the most widely studied prophylactic agents.
- Observational and placebo-controlled trials suggested long-term **macrolide** prophylaxis is effective in reducing exacerbations and hospitalizations.

Prevention of Infections in: Cystic fibrosis

Cystic fibrosis

Cholelithiasis

- Rarely does **cholelithiasis** require surgical intervention other than prophylactic removal **before lung transplantation**.
- Routine **MRSA-directed antibacterial prophylaxis** is not uncommon in the United Kingdom and other parts of Europe.
- Despite this, the overall MRSA prevalence in the United States is much higher.
- Distribution of MRSA types in CF and non-CF differ for a given country.

کوله سیستکتومی به عنوان یک اقدام پروفیلاکتیک؟

237

Cystic fibrosis

Chemoprophylaxis

- We give antibacterial prophylaxis for MRSA and continue treatment for 4 weeks if MSSA or MRSA is isolated on day-of-transplant cultures.
- All patients receive inhaled **colistin** or **tobramycin** during their initial hospitalization to minimize the risk of anastomotic site infection.

Cystic fibrosis

Pneumocystis jirovecii

- We continue TMP/SMX prophylaxis for life as *Pneumocystis jirovecii* and antibacterial prophylaxis.