Chemo-prophylaxis

Principles & Practice

Shahid Beheshti University of Medical Sciences, 2019-20

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کمپیوتر فیلامکسی در استراتژی‌های جهانی کنترل بیماری‌های واقع
Diseases Prevention & Control Strategies:

- Individual
- Institutional
- Community
- Global
Diseases Prevention & Control
Strategies:

Chemoprophylaxis

- Individual
- Institutional
- Community
- Global
1 - کدامیک از انواع پروفیلاکسی، صرفا در سطح فردی (Individual) کاربرد دارد؟

الف) ایمونوپروفسیونال فیلاکسی پسیو
ب) ایمونوپروفسیونال فیلاکسی اکتیو
ج) کموپروفسیونال
د) ایمونوپروفسیونال فیلاکسی پسیو و کموپروفسیونال
۲- کدامیک از انواع پروپیلامکسی، در سطح فردی (Individual) و موسسه‌ای (Institutional) کاربرد دارد (در سطوح دیگر عمدتاً کاربردی ندارد؟
الف) ایمونوپروپیلامکسی پسیو
ب) ایمونوپروپیلامکسی اکتیو
ج) کالیپروپیلامکسی
د) ایمونوپروپیلامکسی پسیو و کالیپروپیلامکسی
Chemoprophylaxis

1. Individual Level

- Surgical wound infections
- Close contact to Meningococcal & Haemophilus influenza infection
۳- برنامه‌هایی که به منظور جلوگیری از انتقال عوامل عفونت‌زای منتقله از طریق خون به کار کننده‌های باشندی انجام می‌شود کدام‌یک از افراد کنترلی مهم‌اند؟
الف) فردی
ب) موسسه‌ای
ج) جامعه
د) جهانی
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.
4- 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:

Chemo prophylaxis

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.
کامپیوتر فیلاتلیستی در سطوح سه گانه پیشگیری
As a primary prevention strategy, it may be used before or after exposure to prevent infection.

Examples of chemoprophylaxis

- **Erythromycin** after exposure to pertussis;
- **Rifampin** after *N. meningitidis*;
- **Amantadine, rimantadine, zanamir, or oseltamivir** after influenza A virus;
- **Zidovudine** after HIV exposure.
پیشگیری از حملات ثانویه ARF
Chronic Granulomatous Disease (CGD)
Mechanism
5 - 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، بوستی و استخوانی در افراد مبتلا به CGD که تحت کمپیوتر فیلاکسی نمی‌باشند، معمولاً ناشی از کدامیک از میکروارسپانیسم‌های زیر است؟
الف) کاندیدا
ب) استافیلوکوک
ج) آسپرژیلوس
د) استرپتوکوک
۷ - عفونت ناشی از کلیه ارگانیسم‌های زیر در افراد مشکوک به CGD قویا حاکی از وجود این بیماری است بجز؟
الف) سرآشیا مارسنسن
ب) کروموباکتریوم ویولاستوم
ج) نوکاردیا
د) استرپتوکوک
8- عفونت ناشی از کلیه ارگانیسم‌های زیر در افراد مشکوک به CGD قویا حاکی از وجود این بیماری است؟

الف) پسودومونا آتروژنوزا
ب) بورخولدرا سپاسیا
ج) سراسیا مارسسنس
د) کروموبکتیریوم ویولاستوم
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 - کمپیوترفیلاکسی 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 کمولروفیلاکسی می‌باشد، به احتمال زیاد ناشی از کدامیک از ارگانیسم‌های 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.
11 - کلیه مطالب زیر در مورد بیماری‌های قارچی در زمانه CGD صحیح است یا نه؟
الف) شیوع بیماری‌های قارچی بیشتر از بیماری‌های باکتری‌ای است.
ب) ایتراکونازول، باعث کاهش فراوانی و شدت بیماری‌های قارچی می‌شود.
ج) گونه‌های آسپرژیلوس در این زمانه بیماری‌زا واقع می‌شوند.
د) قارچ‌های نادری نظیر اگزوفیلیا و پسیلوماپیسیس نیز بیماری‌زا واقع می‌شوند.
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>
<thead>
<tr>
<th>AGENT</th>
<th>DOSAGE</th>
<th>ROUTE</th>
<th>DURATION (DAYS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Penicillins</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penicillin V</td>
<td>Children ≤27 kg (60 lb): 250 mg two to three times daily</td>
<td>Oral</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Children &gt;27 kg, adolescents, and adults: 500 mg two to three times daily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>50 mg/kg once daily (maximum, 1 g)</td>
<td>Oral</td>
<td>10</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzathine penicillin G</td>
<td>600,000 U for patients ≤27 kg; 1.2 million U for patients &gt;27 kg</td>
<td>Intramuscular</td>
<td>Once</td>
</tr>
</tbody>
</table>
۱۳- در پیشگیری اولیه ARF که همان درمان فارنژیت استریتیکی است در صورت وجود هیپرسانسیتوییته تایپ ۱، کلیه داروهای زیر را می‌توان تجویز کرد بجز:
الف) کلاریترماپایسین
ب) آزیرتوباپایسین
ج) کلیندامایسین
د) سفادروکسیل
### For Individuals Allergic to Penicillin

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Dosage</th>
<th>Route</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrow-spectrum cephalosporin† (cephalexin, cefadroxil)</td>
<td>Variable</td>
<td>Oral</td>
<td>10</td>
</tr>
<tr>
<td><strong>or</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clindamycin</td>
<td>20 mg/kg/day divided in three doses (maximum, 1.8 g/day)</td>
<td>Oral</td>
<td>10</td>
</tr>
<tr>
<td><strong>or</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Azithromycin</td>
<td>12 mg/kg once daily (maximum, 500 mg)</td>
<td>Oral</td>
<td>5</td>
</tr>
<tr>
<td><strong>or</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarithromycin</td>
<td>15 mg/kg/day divided twice daily (maximum 250 mg twice daily)</td>
<td>Oral</td>
<td>10</td>
</tr>
</tbody>
</table>

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

†To be avoided in those with immediate (type I) hypersensitivity to a penicillin.
ارهای ریز در صورت حساسیت به ARF در پیشگیری ثانویه پنی سیلیس، ترجیحاً کدامیک از داروهای زیر را تجویز می‌کنید؟
الف) نیتازوکسانید (آزولید)
ب) آزیترومایسین (ماکرولید)
ج) سولفادیازین
د) هیچکدام
### TABLE 200-4  Secondary Prevention of Rheumatic Fever (Prevention of Recurrent Attacks)

<table>
<thead>
<tr>
<th>AGENT</th>
<th>DOSE</th>
<th>MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzathine penicillin G</td>
<td>600,000 U for children ≤27 kg (60 lb), 1.2 million U for those &gt;27 kg (60 lb) every 4 wk*</td>
<td>Intramuscular</td>
</tr>
<tr>
<td>Penicillin V</td>
<td>250 mg twice daily</td>
<td>Oral</td>
</tr>
<tr>
<td>Sulfadiazine</td>
<td>0.5 g once daily for patients ≤27 kg (60 lb)</td>
<td>Oral</td>
</tr>
<tr>
<td></td>
<td>1.0 g once daily for patients &gt;27 kg (60 lb)</td>
<td></td>
</tr>
</tbody>
</table>

**For Individuals Allergic to Penicillin and Sulfadiazine**

<table>
<thead>
<tr>
<th>MACROLIDE or AZALIDE</th>
<th>DOSE</th>
<th>MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macrolide or azalide</td>
<td>Variable</td>
<td>Oral</td>
</tr>
</tbody>
</table>

*In high-risk situations, administration every 3 weeks is justified and recommended.
۵- پروفیلاکسی ثانویه ARF را در کسانی که دچار کاردیت و ضایعات دریچه ای پایداری هستند معمولاً تا چه موقع ادامه می‌دهید؟
الف) ۵ سال
ب) ۲۱ سالگی
ج) ۴۰ سالگی
د) تا پایان عمر
<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DURATION AFTER LAST ATTACK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rheumatic fever with carditis and residual heart disease (persistent valvular disease*)</td>
<td>10 yr or until age 40 yr, whichever is longer; sometimes lifelong prophylaxis (see text)</td>
</tr>
<tr>
<td>Rheumatic fever with carditis but no residual heart disease (no valvular disease*)</td>
<td>10 yr or until age 21 yr, whichever is longer</td>
</tr>
<tr>
<td>Rheumatic fever without carditis</td>
<td>5 yr or until age 21 yr, whichever is longer</td>
</tr>
</tbody>
</table>

*Clinical or echocardiographic evidence.
۶- به منظور ییشگکری از گلومرولونفروت حاد بعد از عفونت استروتکوکی (APSGN) معمولاً کدامیک از آنتی بیوتیک‌های زیر را توصیه می‌کنید؟
الف) پنی سیلین
ب) سفالوسپورین
ج) ماکولید
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 استریتوكوک
پیوژن، پروفیلاکسی با کلیه داروهای زیر توصیه شده
است بجز؟
الف) کلاریتروماپیسین به مدت ۵ روز
ب) بنزاتین پنی سیلیتن یک تزریق واحد
ج) پنی سیلیتن پروکائین عضلانی تا ۵ روز
د) پنی سیلیتن G يا 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 اندازه‌گیری‌های کمپیوتری‌الکسی علیه استرپتوکوک‌های 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) ابتلا نوزاد قبلی به عفونت مورد بحث
د) مثبت بودن کشت و اثر یا رکتور در اواخر بارداری
## TABLE 203-3  Indications and Nonindications for Intrapartum Antibiotic Prophylaxis to Prevent Early-Onset GBS Disease

<table>
<thead>
<tr>
<th>INTRAPARTUM GBS PROPHYLAXIS INDICATED</th>
<th>INTRAPARTUM GBS PROPHYLAXIS NOT INDICATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous infant with invasive GBS disease</td>
<td>Colonization with GBS during a previous pregnancy (unless an indication for GBS prophylaxis is present for current pregnancy)</td>
</tr>
<tr>
<td>GBS bacteriuria during any trimester of the current pregnancy*</td>
<td>GBS bacteriuria during previous pregnancy (unless an indication for GBS prophylaxis is present for current pregnancy)</td>
</tr>
<tr>
<td>Positive GBS vaginal-rectal screening culture in late gestation† during current pregnancy*</td>
<td>Negative vaginal and rectal GBS screening culture in late gestation† during the current pregnancy, regardless of intrapartum risk factors</td>
</tr>
<tr>
<td>Unknown GBS status at the onset of labor (culture not done, incomplete, or results unknown) and any of the following: • Delivery at &lt;37 wk gestation • Amniotic membrane rupture ≥18 hr • Intrapartum temperature ≥100.4°F (≥38.0°C)‡ • Intrapartum NAAT§ positive for GBS</td>
<td>Cesarean delivery performed before onset of labor on a woman with intact amniotic membranes, regardless of GBS colonization status or gestational age</td>
</tr>
</tbody>
</table>

Cesarean and Prophylaxis

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M 2015, CHAP. 203, p2346
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 سیلیس، در کدامیک از موارد
زهر، توصیه شده است؟
الف) عفونتهای مننگوکوکی
ب) عفونتهای باکتریال متعاقب عفونتهای ویروسی
ج) پنومونی بعد از کوما، شوک و نارسایی احتمالی قلب
د) استرپتوکوک آگالاکتیا در شیرخواران مادران آلوده
۱۹ - کمپیوترفیلیaksi با پنی سیلین در کدامیک از موارد زیر، موتور واقع میشود؟
الف) عفونت منگوکوکی در اطرافیان
ب) عفونت هموفیلوسی در زمینه آسپنی
ج) عفونت باکتریال متعاقب عفونتهای ویروسی
د) پنومونی پس از کوما، شوک یا نارسايي احتقاني 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
21- کدامیک از سفالوسبورین‌های زیر ترجیحاً طی جراحی‌های کولورکتال، مورد استفاده قرار می‌گیرند؟
الف) سفازولین
ب) سفوتان
ج) سفالکسین
د) سفتراپاسون
۲۲- کدامیک از سفالوسپورین‌های زیر ترجیحا طی جراحی‌های کولورکتال، مورد استفاده قرار می‌گیرند؟
الف) سفوکسیتین
ب) سفازولین
ج) سفالکسین
د) سفتراکسون
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 سفالوسبورین‌ها به عنوان داروی انتخابی در پروبیلاکسی تعیین جسم خارجی در بدن و بسیاری از اعمال جراحی دیگر که خطر وقوع عفونت، بسیار بالا است توصیه شده است؟
الف) سفازولین
ب) سفوکسیدین
ج) سفوپتان
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.
اثر پروفیلاکتیک فوزیديک اسید در کدامیک از موارد زیر به اثبات رسیده است؟
الف) عمل جراحی مغز و اعصاب
ب) عفونتهای مرتبط با دیالیز صفاقی
ج) قبل از عمل جراحی چشم
د) عفونتهای بعد از اعمال ارتودی
**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 prophylaxis without evaluation of impact on resistance.

- No difference in peritonitis rates in patients with continuous ambulatory peritoneal dialysis 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*

**Gentamycin**

- **Gentamicin** or tobramycin, 5 mg/kg IV, is recommended as an alternative in patients with β-lactam allergy in genitourinary and gastrointestinal procedures.
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.
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. Biterrorism
۴۴ - تاثیر داکسی سیکلین در کموپروفیلاکسی 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 قمیروپیلاتکسی 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.
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…
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.
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.
Prophylactic use of Rifamycins

• 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.
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.
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.
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 کموپروفیلاکسی استفاده می‌شود یا؟
الف) آیندکتومی غیرکمپلیکه
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:
  - \( \beta \)-lactam-allergic/intolerant patients for many surgical indications that carry risk for anaerobic infection, in combination with other antimicrobials.
Prophylactic use of Metronidazol

- 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
Prophylactic use of Macrolides

1. Pertussis
2. Prophylaxis of disseminated *M. avium*
۲۷ - در کمپوزیت لیکسی تماس یافتگان با سیاه سرفه،
کدامیک از آنتی بیوتیک‌های زیر داروی انتخابی به
حساب می‌آید؟
الف) اریتروماپسرن
ب) کلاریتروماپسرن
ج) آزیتروماپسرن
د) همه ماکرولیدها
Prophylactic use of Macrolides

Erythromycin, Clarithromycin & Azithromycin

- **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.
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
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, TMPSMX 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 quinolone-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.
• Contingency treatment at the onset of diarrhea is preferred for travelers, and with this approach, norfloxacin (400 mg twice daily for 3 days) 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 (\( P = .05 \)).

\( M 2015, \text{CHAP. 34, p432} \)
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 pathogens can be used in combination with fluoroquinolones in prophylaxis. This approach can reduce gram-positive bacteremias but is less well tolerated.

- 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/mm$^3$

- 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/mm$^3$ 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

Nitrofurantoine

• 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

Nitrofurantoine

- In a more heterogeneous population, nitrofurantoin was equivalent to cefaclor (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

Nitrofurantoine

- 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

Nitrofurantoine

- 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

Nitrofurantoine

- Antimicrobial prophylaxis is not of value in patients with long-term indwelling catheters.
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.
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.
• 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.
• 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.
• 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.
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.
• 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.
Preoperative skin site preparation with CHG-alcohol preparations are superior to povidone-iodine.

Chlorhexidine-alcohol may be superior because CHG is not inactivated by blood or serum, as is povidone-iodine.
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 نتائج؟

صفحه ۶۵۶ و ۶۵۴ حدود یک صفحه کامل کتاب
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.
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.
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.
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.
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*).
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.
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.
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.
30 - پروفیلاکسی با فلوكونازول به مقدار 200 تا 400 میلی گرم یک بار در هفته باعث کاهش میزان بروز کدامیک از بیماری‌های زیر میشود؟
الف) کاندیدیازیس مری در زمینه عفونت HIV
ب) کاندیدیازیس واژن
ج) کریپتوکوزیس
د) هیستوپلاسموزیس
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.

فلوكونازول یک بار در هفته؟
۳۱- پروتیلاکسی با فلواکونازول به مقدار ۲۰۰ میلی گرم یک بار در روز باعث کاهش بروز کودکی پیامردیزاده‌ای زیر می‌شود؟
الف) کاندیداژیس مری
ب) کاندیداژیس فارنتر
ج) کرپتوکوزیس
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.

فلوكونازول يك 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.
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).
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. Also effective, and perhaps better tolerated, is a reduced dosage of one single-strength tablet daily or one double-strength tablet three times weekly.
در مناطق آندمیک مالاریایی مقاوم به کلروکین، کموپروفیلاکسی با کلیه داروهای زیر، توصیه شده است بجز؟
الف) مفلوکین هفته‌ای یک بار
ب) داکسی سیکلین روزی یک بار
ج) آتوواکان- پروگوائین، روزی یک بار
د) کلروکین روزی دو بار
۳۳- کلروکین در تمامی گونه‌های انگل مالاریایی به منظور درمان و پروفیلاکسی به عنوان داروی انتخابی در نظر گرفته می‌شود بجز؟
الف) فالسپیراروم
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)**.
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.
۴۴- مرد ۳۰ ساله ای که در یک منطقه مالاریا خیز، تحت پویش پروتیلاکسی با مفلوکین است دچار بی قراری حاد، افسردگی، اضطراب و گیجی گردیده است، کدامیک از اقدامات زیر را برای وی انجام می‌دهد؟
الف) قطع کامل مفلوکین
ب) افزایش فاصله دوزهای بعدی دارو
ج) کاهش دارو به نصف مقدار قبلی
د) اندازه گیری سطح سرمی دارو
۵ ۳۵ - مسمومیت عصبی - روانی، که گاهی ممکن است تهیید 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.
۶- خانم ۳۰ ساله ای که از مدتی قبل تحت پوشش پروفیلاکسی با مفلوکین بوته است، در روز جاری مشخص شده است که دو ماهه بارداری باشد. 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) اندامز گیری سطح سرپوش 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.
37- پایداری پیپرکین 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*. 
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 هپینوزوئیته‌های انگل مالاریا موثر است و تاثیر پروفنیلاکتیک آن در انواع مختلف مالاریا ده برابر پریماکین است؟
الف) پیپراکین
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 and 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 کموپرفیلاکسی مالاریا مصرف نشود؟
الف) داپسون همراه با پریمتامین
ب) اتوواکان همراه با پروگونیل
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>
<thead>
<tr>
<th>DRUG</th>
<th>ADULT DOSE</th>
<th>PEDIATRIC DOSE</th>
<th>PRECAUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Areas with Chloroquine-Sensitive Malaria</strong>&lt;br&gt;Chloroquine Phosphate (Aralen, Generics)</td>
<td>300 mg base once weekly&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5 mg/kg base once weekly, up to the maximum adult dose of 300 mg base&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Drug accumulation from prolonged use or inadvertent daily dosing may cause retinopathy.</td>
</tr>
<tr>
<td>Supplied in 300-mg base tablets</td>
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<tr>
<td><strong>Areas with Mefloquine-Sensitive Malaria</strong>&lt;br&gt;Mefloquine (Lariam, Generics)</td>
<td>250 mg salt once weekly&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Dosed according to body weight: ≤9 kg: 5 mg/kg salt once weekly 10-19 kg: ½ tablet once weekly 20-30 kg: ¾ tablet once weekly 31-45 kg: ½ tablet once weekly &gt;45 kg: 1 tablet once weekly&lt;sup&gt;c&lt;/sup&gt;</td>
<td>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.</td>
</tr>
<tr>
<td>Supplied in 250-mg salt tablets</td>
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<td></td>
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<tr>
<td><strong>All Areas</strong>&lt;br&gt;Atovaquone-Proguanil (Malarone)</td>
<td>1 adult tablet daily&lt;sup&gt;d&lt;/sup&gt;</td>
<td>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 &gt;40 kg: 1 adult tablet daily&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Take with food or whole milk. Not recommended for children weighing &lt;5 kg, pregnant women, or women who breastfeed. Children weighing &lt;5 kg, Contraindicated in individuals with severe renal impairment.</td>
</tr>
<tr>
<td>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)</td>
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<tr>
<td><strong>Doxycycline</strong>&lt;br&gt;</td>
<td>100 mg daily&lt;sup&gt;e&lt;/sup&gt;</td>
<td>Children ≥8 yr old: 2.2 mg/kg up to maximum adult dose of 100 mg daily&lt;sup&gt;e&lt;/sup&gt;</td>
<td>Do not use doxycycline in children &lt;8 yr old or in pregnant women.</td>
</tr>
<tr>
<td>Supplied in 100-mg tablets</td>
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<tr>
<td><strong>Areas with Mostly P. vivax</strong>&lt;br&gt;Primaquine Phosphate</td>
<td>30 mg base daily&lt;sup&gt;f&lt;/sup&gt;</td>
<td>0.5 mg/kg base up to maximum adult dose of 30 mg base daily&lt;sup&gt;f&lt;/sup&gt;</td>
<td>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.</td>
</tr>
<tr>
<td>Supplied in 15-mg base tablets</td>
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</tbody>
</table>

<sup>a</sup>When 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](http://www.cdc.gov/malaria/travelers/drugs.html).

<sup>b</sup>Beginning 1-2 weeks before travel and continuing weekly for 4 weeks after leaving a malarious area.

<sup>c</sup>Beginning 2-3 weeks before travel and continuing weekly for 4 weeks after leaving a malarious area.

<sup>d</sup>Beginning 1-2 days before travel and continuing daily for 7 days after leaving a malarious area.

<sup>e</sup>Beginning 1-2 days before travel and continuing daily for 4 weeks after leaving a malarious area.

<sup>f</sup>Beginning 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](http://www.cdc.gov/malaria).*
<table>
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<th>PEDIATRIC DOSE</th>
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<td>250 mg salt once weekly(^c)</td>
<td>Dosed according to body weight:</td>
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<td></td>
<td></td>
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<td></td>
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<td>20-30 kg: (\frac{1}{2}) tablet once weekly</td>
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<tr>
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<td>31-45 kg: (\frac{3}{4}) tablet once weekly</td>
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<td></td>
<td>&gt;45 kg: 1 tablet once weekly(^c)</td>
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<td><strong>All Areas</strong></td>
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<td>Atovaquone-Proguanil (Malarone)</td>
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<tr>
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<td>Dose per body weight:</td>
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<td>tablets containing 250 mg</td>
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<td>proguanil (adult tablet) or</td>
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<td></td>
<td></td>
<td>&gt;40 kg: 1 adult tablet daily(^d)</td>
</tr>
</tbody>
</table>
**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\(^d\)

---

**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\(^f\) |

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\(^a\)When several different drugs are recommended for an area, this table might help in the decision-making.

\(^b\)Beginning 1-2 weeks before travel and continuing *weekly* for 4 weeks after leaving a malarious area.

\(^c\)Beginning 2-3 weeks before travel and continuing *weekly* for 4 weeks after leaving a malarious area.

\(^d\)Beginning 1-2 days before travel and continuing *daily* for 7 days after leaving a malarious area.

\(^e\)Beginning 1-2 days before travel and continuing *daily* for 4 weeks after leaving a malarious area.

\(^f\)Beginning 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).
Antiviral prophylaxis and preemptive therapy have become standard practice in immunocompromised patients, such as hematopoietic stem cell and solid-organ transplant recipients.
28. کلیه مطالب زیر در مورد کموپروفیلاکسی با Oseltamivir علیه آنفلوآنزا صحیح است بجز؟
الف) باعث کاهش موارد علامت دار بیماری میشود
ب) کفايت این دارو در دریافت کندگان پیوند کلیه ۸۰% است
چ) باعث کاهش عوارض ثانویه بیماری میشود
د) از وقوع عفونت بدون علامت، جلوگیری می‌کند
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.
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.
با ۳۹ در گدامیک از موارد زیر کمپرورفیلاکسی کوتاه مدت با آسیکلولویر باعث کاهش میزان عودهای بعدی عفونت ناشی از هیرپس سیمپلکس تایپ ۱ می‌شود؟
الف) عود ضایعات مرتبط با تابش آفتاب ب) عود تبخل لبها 
ج) عود بیماری چشمی د) عود هیرپس انگشتان (Whitlow)
۰۴ - در کلیه عفونت‌های هرفسی زیر، تأثیر کمپروفیلاکسی طولانی مدت با آپیکلوویر به اثبات رسیده است بجز ؛
الف) پیشگیری از عفونت اولیه در مهد کودک‌ها
ب) پروفیلاکسی بعد از تماس
چ) اریتمی مولتی فرم مرتبط با هرسی
د) هرسی انگشتان
Prophylactic use of Drugs for Herpes viruses

Acyclovir & Valcyclovir

• **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.
۱۹۰ - 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

• 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.
۲۴- طی طغیان آبله مرگان در یکی از مهد کودک‌ها به منظور پیشگیری از وقوع عفونت در کودکان حساس تماس یافته و نهایتا 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
• **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.
Prophylactic use of Drugs for CMV

Ganciclovir & CMV

• 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.
CMV به منظور پیشگیری از وقوع عفونت‌های در زمینه پیوند ریه، کدامیک از رژیم‌های دارویی زیر توصیه شده است؟
الف) آسیکلوری به مدت ۵ سال
ب) وااسلیکلوری به مدت ۱۰ سال
ج) گان سیکلوری 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.
44 - تاثیر گدامیک از داروهای ضد ویروس بر کاهش عفونت‌های CMV بعد از بیوند قلب، کبد، کلیه، ریه و مغز استخوان، به اثبات رسیده است؟
الف) آسیکلوویر
ب) گان سیکلوویر
ج) والاسیکلوویر
د) تمام موارد فوق
• 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.
**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.
• 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.
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.
45- تاثیر پروفیلاکتیک آئروسول انترفرون ألفا‌ی داخل کبدی در کمکی از موارد زیر به اثبات رسیده است:
الف) آنفلوانزای A
ب) آنفلوانزای B
ج) سرماخوردگی بینووبیروسی
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);
Prevention of Acute Otitis Media (AOM)
Prevention of Acute Otitis Media

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

(اتیت حاد میانی) صحیح است بجز؟
الف) در کودکانی مجاز است که دچار عفونت‌های شدید و عودکنده‌ای هستند
(ب) در صورتی که در کودکان بزرگتر، طی شش ماه گذشته، سه بار با عود
پیماری شدید، مواجه شده باشند
(ج) آموزکسی سیلیس به مقدار ۴۰–۲۰۰ میلی گرم / کیلوگرم / روز داروی
مناسب است
(د) کودکانی که تحت پوشش کمپیوروفیلاکسی قرار می‌گیرند باید هفت‌های
یکبار از نظر تجمع مايع در گوش میانی معاينة 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.
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.
46- 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) کموپوروفیلاکسی با آموکسی سیلین به مقدار ۶۰ میلی گرم / کیلو گرم
ب) واکسیناسیون با واکسن هفت ظرفیتی یا سیزده ظرفیتی پنوموکوک کوئتزوگه
ج) عمل جراحی تمپاویلاستی
د) شرح محسس و معایب روشهای مختلف برای والدین و تصمیم گیری براساس نظر آنها
AOM

(اتیت حاد میانی) صحیح است بجز؟

الف) در کودکانی مجاز است که دچار عفونت‌های شدید و عودکنده‌ای هستند.

ب) در صورتی که طی یکسال گذشته، دوبار با عود بیماری شدید، مواجه شده باشند.

ج) سولفاتوکسازول به مقدار 50 میلی گرم / کیلوگرم / روز داروی مناسبی است.

d) کودکانی که تحت پوشش کمپرورفیلاکسی قرار می‌گیرند باید ماهی یکبار از نظر تجمع مایع در گوش میانی معاونی شوند.
• Physicians must discuss with the parent the risk-benefit ratio of antibiotic prophylaxis versus surgery for prevention of further severe AOM.
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.
• 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.
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.
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.
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.
۹۴- کودک سه سالهای که دچار مننزیت هموفیلوسی بوده است در صورتی که با کدامیک از داروهای زیر درمان شده باشد در پایان درمان، بايد تحت پوشش پروفیلاکسی با ریفامپیین نيز قرار گيرد؟
الف) سفتپیاکسون
ب) سفوتاکسیم
ج) سولپاکتام - امپی 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 هم طبق مطالعات انجام شده، بر تأثیر پروفیلاکتیک کدامیک از آنتی بیوتیک‌های زیر در پیشگیری از حملات COPD مجدد شده است؟
الف) سفالوپسرین‌های نسل اول
ب) سفالوپسرین‌های نسل دوم
ج) ماکرولیدها
د) سولفاامیدها
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.
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.