

شرح المضادات الحيوية

في ٢٧ صفحة

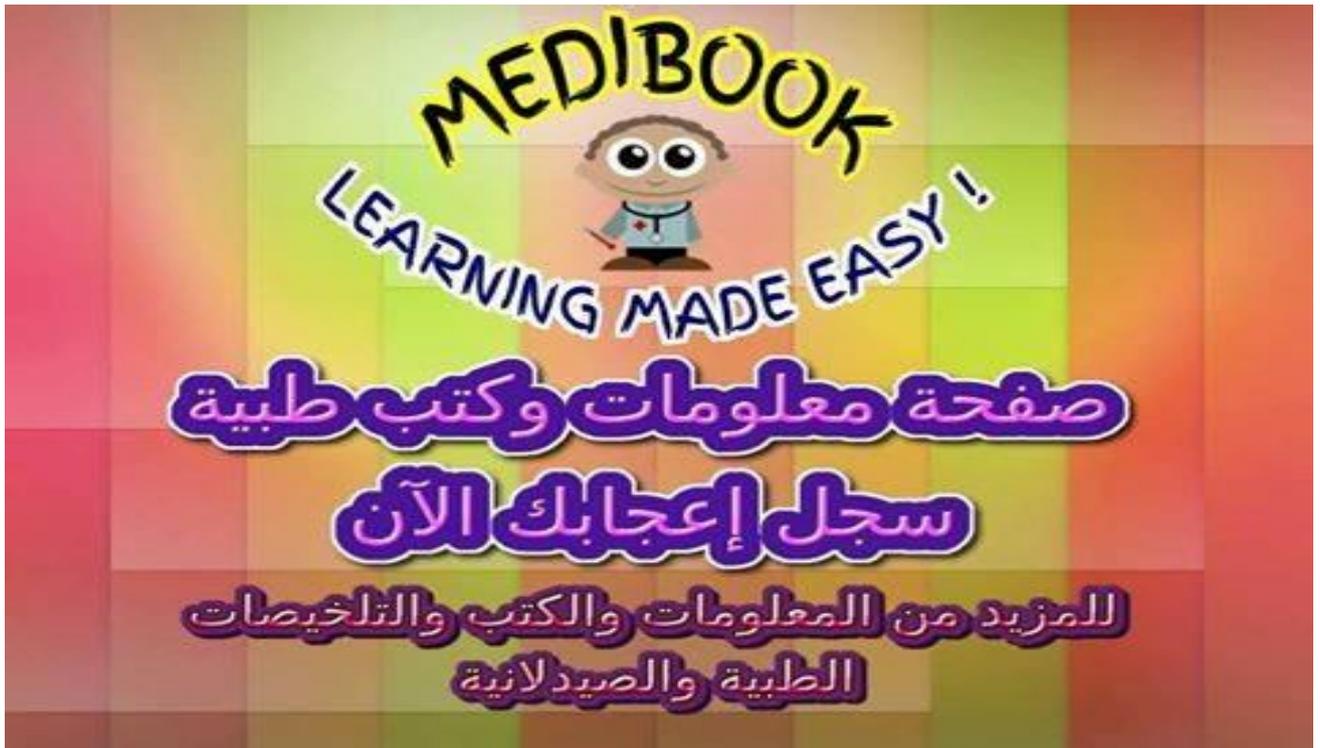
الملف من إعداد

صفحة معلومات و كتب طبية

سجل إعجابك الآن للمزيد من الكتب والتلخيصات الطبية الهامة

صفحتنا على الفيس بوك

جروبنا الطبي



بسم الله الرحمن الرحيم

الحمد لله رب العالمين والصلاة والسلام على أشرف المرسلين سيدنا محمد صلى الله عليه وعلى آله وصحبه وسلم ثم أما بعد

قال رسول الله صلى الله عليه وسلم

نصر الله امرأ سمع منا حديثاً فبلغه غيره ، فرب حامل فقه إلى من هو أفقه منه ، و رب حامل فقه ليس بفقيه ، ثلاث لا يغل عليهن قلب مسلم : إخلاص العمل لله ، و مناصرة ولاة الأمر ، و لزوم الجماعة ؛ فإن دعوتهم تحيط من ورائهم و من كانت الدنيا نيته فرق الله عليه أمره ، و جعل فقره بين عينيه ، و لم يأت من الدنيا إلا ما كتب له ، و من كانت الآخرة نيته جمع الله أمره ، و جعل غناه في قلبه ، و آتته الدنيا و هي راغمة

الراوي : زيد بن ثابت - المحدث : الألباني - المصدر : صحيح الترغيب - خلاصة حكم المحدث : صحيح

"مهاجاة"

وهديه جميلة منا اليكم

من أحد الموضوعات المهمة التي تابعتها على يدينا

هو موضوع المضادات الحيوية

بعض المصطلحات المهمة من بعض المصطلحات والمواضع المختلفة وبك الأهمية المسرى

في ناس طلبوا تجميعها في ملف .. والحمد لله جمعناهم

ومع أهم ما يجب أن تعرفه عن المضادات الحيوية "

بسم الله

المضادات الحيوية جزء مهم جداً للطبيب وفي أثناء ممارستك للطب هتلاقي ان اكثر من نص الروشتات اللي هتكتبها لازم يكون فيها مضاد حيوي وبتزيادة معلوماتك عن المضادات الحيوية هتتعرف كل مجموعه بتستخدم امتى وازاي وقد ايه استخدام المضاد الحيوي لازم يكون بحذر شديد يعني لازم اختيار المضاد الحيوي المناسب للعيان المناسب وده هنتعلمه في اخر حوارنا

How to choose antibiotic ?

ازاي اختار المضاد الحيوي المناسب للمريض؟؟

(مضاد حيوي مناسب بتركيز مناسب بجرعه مناسبه ولمده مناسبه)

- طبعا في مضادات حيويه متداخله في النشاط "spectrum of activity" بتاعها وهتبقى عاوز تعرف تدي مين فيهم

- في عوامل معينه بتخليك تزكي مضاد حيوي عن الثاني في كل حاله زي اللي هنتعرضها مع بعض دلوقتي.

1-Common causative organism:

- في امراض كتيره بيكون معروف عادة ان البكتريا المسببه بتكون Gram +ve وبالتالي هطور على دوي يكون كويس قوي ضد هذا النوع من البكتيريا زي مثلا ال tonsillitis ممكن تدي أي دوا يغطي ال gram +ve لكن مستحب زي ما قلنا قبل كده 1st macrolides then 1' generation cephalosporins وهكذا بقى كل مرض معين له اشهر مضاد حيوي مناسب وفي امثله على كده زي مثلا :

a. UTI:

quinolones then sulpha

b. GE:

3rd generation cephalosporines and sulpha

c. Upper respiratory tract infections:

macrolides, amoxicillin+clav, cephalosporines 1St & 2nd generation

d. lower respiratory tract infections:

Quinolones, amoxicillin+clav, 2nd & 3rd generation cephalosporines

2-Age of the patient:

e.g. Quinolones are contraindicated in extremities of age

3-General status of the case:

فيه بقى حالات خاصه بالمرضى :

a. pregnancy and lactation: no quinolones, tetracyclines, macrolides .

- زي مثلا في حالة الحمل مهم قوي انك تاخذ بالك من نوع المضاد الحيوي اللي هتديه وفي انه يفتريه من الحمل ودي امثله لمضادات حيويه امنه على الحمل

Here's a sampling of antibiotics generally considered safe during pregnancy:

Amoxicillin , Ampicillin ,Clindamycin , Erythromycin , Penicillin

b. renal impairment aminoglycosides are used cautiously, sulpha

- نيجي بقى لحالة مرضى الكلى او اضطراب وظائفها : والله فيه مضادات حيويه لازم هغير في الجرعه والمدة العلاجية لانها مش امان على الكلى بس فيه مضادات حيويه مش بحتاج اعدل الجرعه زي

- A few kind of 3rd gen of cephalosporine such as : Ceftriaxone and Cefoperazone doesn't need adjust for renal impairment.

They relatively safe with minimal nephro-toxicity.

c. hepatic impairment: sulpha

- مريض الكبد :

- Generally, antibiotics in the penicillin family are the most "liver friendly" and safe for chronic hepatitis patients to use.

4-Receiving other drugs:

e.g. phenytoin with amikacin .

5-History of allergy to any of antibiotics' families:

الخلاصة: انك كده اتعلمت الاساس بتاع المضادات الحيويه وانت بقى مهمتك تطبقه على كل مريض وتختار الانسب له من المضادات الحيويه اسأل الله ان ينفعنا واياكم به اتمنى تكون مفيده بجد.

Special terms :

1- resistance :

لازم ننبه على العيان انه يكمل كورس المضاد الحيوي للاخر حتى لو شعر بتحسن لان ده بيعرض المريض لـ antibiotic resistance

2- empirical :

- كلمة empirical وهي انك تدي للعيان مضاد حيوي معين من غير culture & sensitivity وده في حد ذاته كويس في بعض الحالات .. واللي بيكون معروف فيها نوع الـ most common causative organism
- يعني مش محتاج اني اعمل مزرعه لكن لو العيان مستجيبش للدوا يبقى لازم اعمل مزرعه
- في انواع من المضادات الحيويه مينفعش تتاخذ empirical زي الـ teinam لان من ناحيه غالبيين ومن ناحيه ثانيه مش دايمًا الـ 1st line of antibiotic therapy.

3- Spectrum :

كلمة spectrum ودي معناها المضاد الحيوي ده بيفطي انه يهني نوع من البكتيريا المعروفه وده يخلينا نقول ايه هي اشهر انواعها :

1. G+ve:

e.g. streptococci, pneu mococci, Staphylococci

وطالما قلت على مضاد حيوي انه يغطي ال gram +ve لازم اعرف هو antistaph ولا لا

2. G-ve:

e.g. E. coli, kiebsiella, Pseudomonas

وطالما قلت على مضاد حيوي انه يغطي ال gram -ve فلازم اعرف هو
antipseudamonas ولا لا

3. Atypical:

e.g. mycoplasma, Chiamydia, campylobacter

فيه مضادات حيويه بتشتغل على ال cell wall ودي زي ال penicillin & cephalosporins
وانواع تانيه بتشتغل على ال protein synthesis زي ال quinolones, marolides,
aminoglucosides
وفي انواع اخرى لها طرق تانيه هنذكرها بعدين

Antibiotics groups:

وهنبء باول group معنا وهو ال penicillin

I. Penicillin:

Introduction :

- Discovered in 1928 by Alexander Fleming while he was doing culture to penicillium rubens>> he found exudation of substance with antibiotic propertiesThe 1st discovered family of antibiotics and was used for wounds and skin infections Act on bacterial cell wall >> inhibiting its synthesis

Contain 5 subgroups:

1. Natural penicillin:

Spectrum :

- Cover G +ve bacteria but not antistaph
- Acid sensitive so no oral form (except ospen)
- Penicillinase sensitive so not antistaph
- Short duration of action so can be taken every 6 hours

- Unstable

يعني لما تحل الـ vial بالميه لازم تستعمله علطول ومتركونوش او تستعمل نصه وتسبب النص لجرعه ثانيه لا لازم اللي يتبقى منه يترمي

Members:

a. Benzathine penicillin (long acting penicillin)

حقنة الشهر

- Trade names: **retarpen, Depopen**

- ده احسنهم وقليل لما بيسد سن الحقنة
- Vial contains 1,200,000 IU
- Dose: one vial every 2-3 weeks
- Used in prophylaxis and ttt of RE
- Very Painful and may cause severe allergy

- لازم نعمل اختبار حساسيه مع كل حقنه وبيتاخذ معاها مخدر موضعي عشان الالم الشديد

- وللامانه البنسيلين طويل المفعول بيساء استخدامه بمعنى :
ان أي طفل بيجيلي باللوز وبيقول رجلي بتوجعني يقوم الدكتور عاطيله بنسيلين طويل المفعول علطول .. وده مش صح
- طبعا لان تشخيص الحمى الروماتيزميه له شروط معينه وجع الرجل مش معناه انها حمى روماتيزميه لان وجع المفاصل ممكن يكون جزء من وجع وهمدان في الجسم كله التهاب المفاصل في الحمى الروماتيزميه لازم يستوفي الشروط المعروفة :
migrating, affect the big goints, affected joint is red,hot,swollen with limitation of movement .etc

RE = evidence of recent streptococcal infection (ASO rising titre or +ve throat culture) + 2 major criteria or 1 major with 2 minor
واخيرا للتاكيد مش أي عيل صغير بيشتكى من اللوز ووجع في رجله ياخذ طويل المفعول

b. Penicillin G:

- Trade names: **penicillin G**
البنسيلين المائي
- Vial contains 1,000,000 IU
- Dose: every 6 hours
- Can cross BBB so can be used in meningitis

c. Penicillin V:

- Trade names: **ospen lg, 1.5g**
- The oral form of natural penicillin
- Dose: every 6-8 hrs
- One of the good medications in ttt of strept pharyngitis and tonsillitis

d. Procaine penicillin:

- Not widely used now due to severe allergic reaction and severe pain at the site of injection

2. Narrow spectrum (Penicillinase resistant):

Spectrum :

- They are anti-staph only
- Not used alone but in combination with other broad spectrum penicillins

Members:

Cloxacillin, dicloxacillin, flucloxacillin
المجموعه دي بضيفها anti staph broad spectrum penicillins للاستفاده من انها

3. Broad spectrum penicillins:

spectrum:

- a. cover G +ve mainly but not anti staph
- b. coversome G—ve
- not acid sensitive so can be taken orally

members:

a. Ampicillin:

- Interfere with the final step of cell wall synthesis
- It is weak antibiotic
- Safe during pregnancy and lactation
- Trade names: **ampicillin, epicocillin 250,500mg**

مبقاش حد بيستعمله اليومين دول لانه مضاد حيوي ضعيف وفيه حاجات احسن منه

b. Amoxicillin:

- Strong bactericidal broad spectrum antibiotic
- Trade names: **amoxil, ibiamox, Emox, biomox 250,500mg**
- *Although they are broad spectrum G+ve, they are not antistaph. So they added substances which is penidihinase inhibitor e.g. (sulbactam & clavulonic acid) & therefore these members became **broad spectrum antistaph** as :*

a) Ampicillin + sulbactam:

unasyn, unictam, etc

b) Amoxicillin + calv. a.:

Augmentin, Hibiotic, curam etc

من احسن انواع البنسيلين واكثرها استعمالا هو الاوجمنتين والهيببوتيك

4. Extended Spectrum Penicillins:

spectrum:

- They are recent types of penicillins that cover not only the G +ve including staph but also cover G-ve including Pseudomonas

Members:

- a. Azetreonam: **Azactam**
- b. Pipracillin: **pipril**
- c. Pipracillin + tazobactam: **tazocin**
- d. Meropenem + cilastatin: **Tienam**

- They are strong and effective but they are very expensive

مش الخط الاول في العلاج ولا نعطيهم الا بناء على مزرعه مش كده وخلص

5. Combinations (narrow spectrum + broad spectrum):

spectrum:

بناخذ من كل واحد الميزة بتاعته من ال narrow انه Antistaph وبنأخذ من ال broad أنهم بيغطوا معظم ال G+ve

Members:

a. Ampicillin + flucloxacillin:

Ampiflux

b. Amoxicillin + flucloxacillin:

flumox etc

NB How to calculate the dose of antibiotics in pediatrics ?

- لازم نتعلم ازاى نحسب جرعة المضاد الحيوي في الاطفال
- تختلف جرعات المضادات الحيوية حسب الاتى:
- ← شدة الاصابة ..وزن الجسم..نوع المضاد الحيوي
- ممكن ان نقسم جرعات المضادات الحيوية حسب العمر كالتالى
- 1- عمر يوم الى 6شهور .. 62.5 مجم كل 8ساعات
- 2- عمر 6شهور الى سنة...125مجم كل 8ساعات
- 3- عمر سنة الى 12سنة 250 مجم كل 8ساعات
- 4- عمر 12سنة الى مافوق 500 مجم كل 8ساعات

← بصفة عامة .. للحصول على اقرب جرعة :
الاطفال 25الى 50مجم /كيلو جرام من وزن الطفل ..3جرعات يوميا

** مثال:

- ← طفل وزنه 12 كيلو جرام ...
- عدوى ضعيفة مثل التهاب الحلق
- 12*25 مجم يساوى 300مجم على 3جرعات .. اذن كل جرعة 100مجم
- وفى حالة العدوى الشديدة 50*12 .. وهكذا....

Trade names & prices of penicillin :

- اسعار الادوية اللي تناولناها وبكده نكون اتعرفنا على عائلة البنسلين بشكل جيد

RETARPEN 1,2 M IU 4.50

OSPEN 1000 mg TAB 5.00

OSPEN 1500 IU TAB 9.50
OSPEN 400 mg SUSP 5.50
OSPEXIN 125 mg SYP 5.00
OSPEXIN 1GM 24.00
OSPEXIN 250 mg SYP 7.00
PENICILLIN G SODIUM VIAL 1.25
PENICILLIN PROCAINE VIAL 0.90
AMOXICID 125 MG. SUSP. 3.00
AMOXICID 250 MG CAP. 3.15
AMOXICID 250 MG SUSP. 4.00
AMOXICILLIN CAP 6.10
AMOXIL 125 mg SYP 3.75
AMOXIL 500 mg CAP 7.00
AMOXIL FORT 250 mg SYP 5.50
AMOXIL VIAL 250mg 3.20
AMOXIL VIAL 500 MG 4.50
AMOXYCID 500 mg CAP 6.20
AMOXYCILLIN 250 mg CAP 2.70
AMOXYCILLIN 250 mg SYP 3.95
AMOXYCILLIN 500 mg CAP 6.10
AMPICILIN 250 mg CAP 3.60

AMPICILLIN 1 GM VIAL 2.10
AMPICILLIN 1 GM VIAL 2.40
AMPICILLIN 1 gm VIAL 2.00
AMPICILLIN 125 mg SYP 2.15
AMPICILLIN 250 mg CAP 4.00
AMPICILLIN 250 mg CAP 3.70
AMPICILLIN 250 mg CAP 3.70
AMPICILLIN 250 mg CAP 3.50
AMPICILLIN 250 mg SYP 4.25
AMPICILLIN 250 mg VIAL 0.80
AMPICILLIN 250 NASR SUSP 3.00
AMPICILLIN 500 CAP 4.30
AMPICILLIN 500 FORTE CAP NILE 5.60
AMPICILLIN 500 mg CAP 5.60
AMPICILLIN 500 mg CAP 6.45
AMPICILLIN 500 mg CAP NASR 6.00
AMPICILLIN 500 mg VIAL 1.80
AMPICILLIN 500 MG VIAL 1.15
AMPICILLIN 500. 5.15
AMPICILLIN 500MG 12 CAP MISR 6.00
AMPICILLIN FORT 250 mg SYP 3.90
AMPICLOX 500 MG CAP 6.60

AMPICLOX 500 mg VIAL 2.90
AMPICLOX 75 mg VIAL 15.00
AMPICLOX SYP 5.35
AMPICTAM 1500MG VIAL 11.75
AMPICTAM 250 MG/5ML 23.00
AMPICTAM 375MG TAB 30.00
AMPICTAM 750ML VIAL 7.75
AMPIFLUX 250MG CAP 4.00
AMPIFLUX 250MG SUSP 5.00
AMPIFLUX 500MG CAP 6.00
AUGMENTIN 1 G TAB 50.00
AUGMENTIN 1.2G VIAL 18.00
AUGMENTIN 156 mg SYP 16.00
AUGMENTIN 312 mg SUSP 24.00
AUGMENTIN 375 mg 10 CAP 26.00
AUGMENTIN 457 MG SUSP 37.00
AUGMENTIN 600 MG VIAL 10.00
AUGMENTIN 625 mg TAB 30.00
EPICOCILLIN 1 GM VIAL 3.25
EPICOCILLIN 125 MG 100 ML 3.00
EPICOCILLIN 125 MG 100 ML SUSP 3.00
EPICOCILLIN 125 mg SUP 1.90
EPICOCILLIN 250 MG 100 ML SYP 4.50
EPICOCILLIN 250 mg CAP 3.00
EPICOCILLIN 250 mg SUSP 3.00
EPICOCILLIN 250mg VIAL 1.50
EPICOCILLIN 500 MG 2 STP 6.90
EPICOCILLIN 500 mg VIAL 1.65
FLUMOX 1 GM VIAL 6.00
FLUMOX 250 MG 100 ML 8.00
FLUMOX 250 mg CAP 4.20
FLUMOX 500 mg VIAL 4.00
FLUMOX 500MG 16CAP 12.00
IBIAMOX 125 ML SYP 3.50
IBIAMOX 250 MG 12 CAP 3.70
IBIAMOX 250 MG SYP 6.00
IBIAMOX 500 MG 12 CAP 6.00
IBIDROXIL 125 mg SYP 6.60
IBIDROXIL 1GM 8TAB 16.00
IBIDROXIL 250 mg CAP 5.90
IBIDROXIL 250 mg SYP 8.80
HIBIOTIC 1000 MG 21.00
HIBIOTIC 156 MG 10.50
HIBIOTIC 312 MG 15.00

HIBIOTIC 375MG 22.00
HIBIOTIC 625 MG 26.00
HIBIOTIC N230 SUSP 60ML 15.00
HIBIOTIC N460 SUSP 60ML 23.00
UNASYN 1500 mg VIAL 17.00
UNASYN 250 MG SUSP 27.50
UNASYN 375 mg TAB 34.95
UNASYN 375 mg VIAL 8.00
UNASYN 750 mg VIAL 12.00
UNDER EYE CONCEALEL 13.75
UNI FRUCTOSE POWDER 13.20
UNIBIOTIC 250 MG 25.00
UNIBIOTIC 500 37.50
UNICTAM 1500MG VIAL 9.50
UNICTAM 250 MG SUSP 21.00
UNICTAM 375 3.75
UNICTAM 375 TAB 30.00
UNICTAM 750 MG 6.00



العائلة الثانية:

II. Cephalosporin

Introduction :

- They are structurally closely related to penicillin so any patient has allergy to penicillin shouldn't take cephalosporin They have act like penicillins on the bacterial cell wall inhibiting its synthesis

- NB** أي عيان عنده حساسية من البنسيلين المفروض مش نديله كيفالوسبورين
 - في النقطه دي في زياده ممكن تكون مفيده هنا :
 - فيه 10 % cross sensitivity ما بين البنسيلين والكيفالوسبورين .. لذلك أي مريض
 معروف انه عنده حساسية للبنسيلين ممنوع انه ياخذ كيفالوسبورين
 - لكن ال [British National Formulary](#) في نسخة 2008 اشارت الى انه في حالة عدم
 وجود بدائل مناسبة ممكن ادي بعض افراد الكيفالوسبورين مثل :
 → oral cefixime or cefuroxime and injectable cefotaxime, ceftazidime,
 → and ceftriaxone can be used with caution,
 → but the use of cefaclor, cefadrocil, cefalexin, and cefradine should be avoided

NB As we proceed from the 1st generation to the higher generations the spectrum of the G-ve organisms increases

Classification :

- Recently they're classified into 5 generations:

1st generation:

spectrum:

- they cover most of G+ve organisms but not antistaph

Members :

- They are 3 main members:

a. Cephadrine:

- The weakest and not widely used
- Trade names:
Cephadrine, velosef etc 250, 500, 1000mg

b. Cephalexin.

- Trade names:
Cephalexin, ceporex, ...etc 250, 500, 1000mg

c. Cephadroxil:

- The strongest member
- Has antistaph properties
- Long duration of action so can be administered every 12hrs

- Trade names:
Duricef, curisafe, ibidroxil, ...etc 250, 500, 1000mg Zinnat
tablets 500mg

2nd generation:

spectrum:

- Cover both G+ve and G-ve organisms
- They are not antistaph or anti-pseudomonal
- They are usually used in closed space infections e.g otitis media, sinusitis

Members:

- They are 2 main members:

a. Cefuroxime:

- Taken every 12hrs
- Trade names: Zinnat, zinacef, ..etc 250, 500mg

b. Cefaclor:

- Taken every 8hrs:
- Trade names: Bactiolor, cefaclor, . 250, 500mg

3rd generation:

spectrum:

- Cover mainly G-ve organisms but it covers also many G+ve organisms
- Penicillinase resistant so they are antistaph
- They are effective as antipseudomonal agents

Members:

- They are subdivided into 2 categories:

a. Parenteral:

+ Cefotaxime:

- Taken every 12hrs
- It is widely used
- Trade names:
Cefotax, claforan, ...etc 250, 500, 1000mg

+ Ceftriaxone:

- It is widely used as it Taken once daily.
- Not taken with calcium in the same line as it may lead to fatal lung and kidney precipitations.
- It is painful i.e. at the site of injection so there are 2 forms:

Either IM with lidocaine or IV with distilled water

لو هيتاخذ عضل يتحل بليدوكاين لو هيتاخذ وريد يتحل بماء مقطر

- Trade names: **Rocephin, ceftriaxone, ...etc 250, 500, 1000mg** it is safe antibiotic

+ Cefoperazone:

- Trade names: **Cefobid, cefoperazone, 500,1000, 2000mg .1 gram**

يقال انه بيعمل في الاطفال Testicular atrophy

+ Ceftazidim:

- Most effective against pseudomonas
- Most expensive in this group
- Trade names: **Fortum, cefzim, ...etc 250, 500, 1000mg**

b. Oral:

- They are effective against G+ve and G-ve organisms
- They are not antistaph not anti pseudomonal
- Effective in otitis media, sinusitis, UTI, tonsillopharyngitis, acute bronchitis, . . etc

+ Cefixime:

- Daily dose 400mg either single or 2 divided doses
- Trade names: **Ximacef, . . 200, 400mg**

+ Cefpodoxime:

- Daily dose is 100mg on 2 divided doses
- Trade names: **Orelox, ...etc 100mg**

4th generation:

spectrum:

- Very strong generation of cephalosporins
- Cover most of G+ve organisms as the first Generation (antistaph)
- Cover most of G-ve organisms including pseudomonas (more effective than the 3rd generation)

Members:

Members are:

a. Cefepime:

- Trade names: **Maxipime, ...etc 500, 1000mg**

b. Cefpirome:

- Trade names: **cefrom 1, 2gm**

5th generation:

(although this term is not accepted universally)

E.g. **ceftobiprole**

- Has powerful antipseudomonal effect
- Less susceptible to development of resistance

Some of drug interaction

فيه تفاعلات دوائيه لازم ناخذ بالنأ منها :

- 1 -

- Some cephalosporins cause diarrhea. Certain diarrhea medicines, such as diphenoxylate-atropine (Lomotil), may make the problem worse.

- 2 -

- Birth control pills may not work properly when taken at the same time as cephalosporins. To prevent pregnancy, other methods of birth control should be used in addition to the pills while taking cephalosporins.

- 3 -

- Taking cephalosporins with certain other drugs may increase the risk of excess bleeding. Among the drugs that may have this effect when taken with cephalosporins are:

- blood thinning drugs (anticoagulants) such as warfarin (Coumadin)

- blood viscosity reducing medicines such as pentoxifylline (Trental)
- the antiseizure medicines divalproex (Depakote) and valproic acid (Depakene)



III. Aminoglycosides:

Introduction :

- Mechanism of action: inhibit bacterial protein synthesis
- **Spectrum:** effective against wide range of G-ve organisms including pseudomonas but they've weak antistaph effect
- Used in septicemia
- Can't cross BBB (amikacin can be injected intrathecal in meningitis)
- Can't cross mucosal barrier so all are parenteral except neomycin which is oral
- Shouldn't be used more than 5-7 weeks as they may cause ototoxicity (irreversible) & nephrotoxicity (reversible)

لو هتستخدمهم اكثر من اسبوع لازم نتابع المريض بوظائف سمع ووظائف كلى

Members :

1. Gentamycin:

- Dose: 80mg tds
- Trade names: **garamycin, epigent, EE .etc 20, 40, 80mg**

2. Tobramycin:

- Like Gentamycin but More safe than other aminoglycosides
(أغلاهم سعرا)
- Trade names: **tobcin, tobracin, . . .etc 20, 40, 80mg**

3. Amikacin:

- Used for G-ve organisms resistant to garamicin H
- can be injected intrathecal in meningitis
- There is loss of activity between amikacin and penicillins and cephalosporins
- There is incompatibility with heparin, HCT, phenytoin, nitrofurantoin, warfarin, Vitamin B complex and vitamin C
- Dose: 15mg/kg/day
- Trade names: **amikin, amikacin, ...etc 100, 250, 500mg**

4. Neomycin:

- The only oral preparation of aminoglycosides
- Aminoglycosides can't cross the mucosal barrier!!
بس هنا احنا محتاجينه local فعشان كده بنديه oral
- Used in hepatic encephalopathy 4-12gm in 4 divided doses

- Used also in colonic preparation before colorectal surgery (used for 24hr and not exceeding 72hrs)

مبقاش حد بيستخدمه كثير لانه في ابحاث اثبتت انه بيمتص من الامعاء ويؤثر على الكلية وبيعمل اعراض جانبية فبقوا بيستعملوا الفلاجيل احسن منه

بالرغم من انه المجموعه ليها اعراض جانبية ومشاكل كثيره
الا انها مهمه جدا جدا واهميتها تكمن في انها
antipseudomonal and strong against G-ve organisms



IV. Macrolides:

Introduction :

- Mechanism of action:
 - Inhibit bacterial protein synthesis
 - They bind reversibly to the P site on the subunit 50S of the bacterial ribosome

- They tend to accumulate in the leucocytes and are ,therefore, transported into the site of infection

• **Spectrum:**

- They cover the G+ve organisms

- They're effective against penicillinase producing bacteria e.g. staph

- Their spectrum is slightly wider than penicillin so they're common substitute for patients with penicillin allergy

- They are effective against atypical bacteria e.g. Chlamydia, mycoplasma, . .etc

• **Medical Uses:**

- Respiratory tract infections (drug of choice in tonsillitis then 1st generation cephalosporins)

- Skin and soft tissue infections

- Otitis media, UTI

• **Side effects:**

- Inhibition of the cytochrome P450 system so can make

1. Myopathy if used with statins

2. Prolongation of the QT segment leading to torsade de pointes

- These side effects are common with erythromycin and to a lesser extent with clarithromycin and the safest is azithromycin(doesn't inhibit the cytochrome P450 system)

Members:

1. Erythromycin:

- **Erythrocin, erythromycin, ...etc**

2. Azithromycin:

- Unique and has no effect on the cytochrome P450 system — so it is safe

- more effective than erythromycin and cover many G-ve organisms specially on H.influenza

- used widely in practice

- Dose: 500mg/cap. One cap 1 hr. before meal or 2 hours after meal once daily for 3 successive days

كبسوله قبل الغداء بساعه مره يوميا لمدة 3 ايام ببتراكم في الانسجه وتأثيره يستمر حتى 10 ايام ودي ميزه لانه 3 جرعات فبيسهل على المريض

- Trade names: **Zisrocin, xithrone,zithromax, . . .etc**

3. Clarithromycin:

- Used also for ttt of H. pylori as a part of the triple therapy with tinidazole and omeprazole
- Trade names: **Kiacid, . . .etc**

4. Clindamycin:

- Strong against G+ve organisms including staph and anaerobic bacteria
- Trade names: **Dalacin-C**

5. Spiramycin:

- In addition of common uses of macrolides it is used for ttt of
 - a. Toxoplasmosis during pregnancy
 - b. Dental infections
- Dose: 3 million i.u. / 12hrs
- Trade names: **spirex, unispira 1.5, 3 million i.u.**
- By addition of metronidazole (commercially known spirazole) can be used in ttt of H. pylori
- Ketolides block bacterial protein synthesis

New group → Ketolides

معلومة مهمة

- Recently there is new group of macrolides i.e. ketolides which are more potent and effective on macrolides resistant bacteria. They've also 2 binding sites for the ribosomal subunits.

Also there're new generations of ketolides called fluoro-ketolides e.g. solithromycin which has 3 binding sites for the ribosomal subunits

- *Mechanism of Action :*

ketolides tightly bind to two sites on ribosomal RNA

ketolides block bacterial protein synthesis

- *ketolides were engineered to overcome resistance to Biaxin and zithr*



V. Quinolones:

Introduction :

* Mechanism of action:

- They are bactericidal as they inhibit of DNA gyrase enzymewhich is required for DNA replication, transcription, repair and recombination

* Spectrum:

- Cover mainly G-ve organisms including pseudomonas
- Cover some G+ve organisms (i.e. levofloxacin is excellent against G+ve)
- They're effective against atypical bacteria e.g. Chlamydia (i.e. ofloxacin is effective against atypical bacteria)

* Medical uses:

- They're the 1st drug of choice in UTI.
- They're not the 1st line antibiotics in USA and used in hospital acquired infections
- Some members are used also in respiratory tract infections e.g. levofloxacin

* Contraindication:

- Extremities of age either below 12 years old or above 55 years old as they cause premature closure of epiphysis and bone erosions
- Pregnancy and lactation

Members:

- Quinolones are classified according to the structure either fluorinated or not into 2 generations i.e. 1st generation is not fluorinated and 2 generation is fluorinated (f louroqu inolones)
- There is controversy about how to classify the generations
- Addition of fluorine to the quinolones decrease the incidence of resistance so flouroquinolones are widely used.

1. Ciprofloxacin:

- It is widely used in practice
- Trade names: **Ciprofar, ciprobay, ciprocine** etc 250, 500, 750mg
- Dose: bid for 7-14 days

2. Levofloxacin:

- Excellent against G+ve in addition to its spectrum against G-ve like all quinolones
- Trade names: **tavanic, tavacin, . . .etc** 250, 500, 750mg
- Dose: once daily for 7-14 days

3. Norfloxacin:

- Trade names: Epinor 400mg
- Dose: *bid for 7 days*

4. Ofloxacin:

- Used also in ENT infections and skin&soft tissue infections caused by G-ve
- Trade names: **ofloxin, tarivid 200mg**

5. Lomefloxacin:

- Used in respiratory tract infections and UTI
- Long acting so used once daily for 5-10 days
- Trade names: **lomeflox 400mg**

6. Nalidixic acid:

- The oldest member of quinolones , Used in UTI
- Trade names: **nalidram 500mg**
- Dose: *500-1000mg/6hrs for 7-10 days*



VI. Suiphamethoxazole + Trimethoprim:

Introduction :

- Mechanism of action:
 - SMX prevent the 1st step in bacterial folic acid synthesis
 - Tramethoprim prevent the 2 step in bacterial folic acid synthesis
 - Both of them when combined in one drug produce potent bactericidal effect
- Uses:
 - Respiratory tract infections, UTI , Bacterial GE , Skin and soft tissue infections
- Precautions:
 - Adequate fluid intake to prevent crystalluria
 - Stopped immediately if rash appeared due to severe allergic reaction
 - Used cautiously in patients with renal & hepatic impairment and contraindicated with severe impairment *or with blood disorders*

• Trade names:

Sutrim, septrin, sutaprim D.S.(i.e. double strength)



VII. Glycopeptides:

Introduction :

- Mechanism of action: inhibit the synthesis of cell walls in susceptible microbes by inhibiting peptidoglycan synthesis.

Members:

1. Vancomycin:

- Used in ttt of septicemia, lower respiratory tract infections, MRSA , S.E. is ototoxicity and nephrotoxicity

- Trade names: **vancocin, vancomix, ...etc 500mg**

2. Teicoplanin:

- Used as alternative to vancomycin in the ttt of serious G+ve infections where other drugs can't be used e.g. Infective endocarditis, peritonitis, ...etc
- Trade name: **targocid 200,400mg**



VIII. Linezolid: (averzolid 600mg cap)

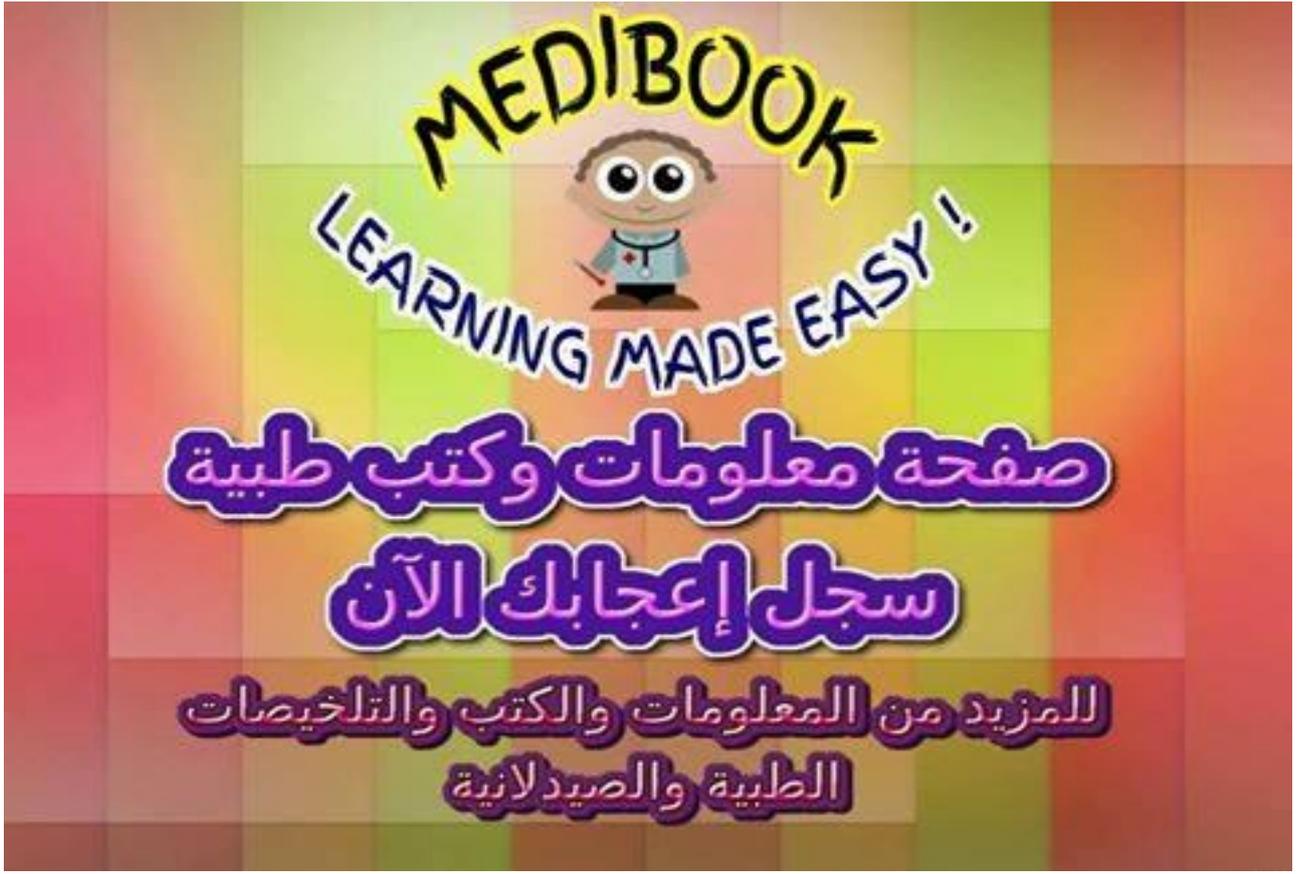
- Used in ttt of G+ve infections of the skin and respiratory tract including VRSA & MRSA
- It is reversible MAO-I so potentiate the action of pseudoephedrine and SSRI

IX. Chloramphenicol:

- It's broad spectrum antibiotic that interfere with bacterial protein synthesis & usually bacteriostatic
- S.E.: BM depression and aplastic anemia
- Trade names: **mephenicol 250mg**

X. Tetracycline:

- Mechanism of action: inhibit bacterial protein synthesis
- Spectrum: effective against atypical bacteria and many aerobic & anaerobic bacteria
- Uses: treatment of acne, trachoma of the eye, mycoplasma, Chlamydia
- Important member is Doxycycline:
 - * Used in respiratory tract infections and UTI and skin infections
 - * Dose is 100mg start with bid in the first day then once daily or may be continued as bid according to the severity of the infection
 - * Trade names: **Doxy M.R. 100mg**
- **They cause permanent discoloration of the teeth if used in children below 8 years**



الملف من إعداد

صفحة معلومات و كتب طبية

سجل إعجابك الآن للمزيد من الكتب والتلخيصات الطبية
الهامة

صفحتنا على الفيس بوك

جروبنا الطبي