1- Making the diagnosis : precsence of infection

لما بدي أحدد شو الدوا اللي بدي استخدمه

لازم اراعي هاي الفاكتورز:

- ✓ To be sure that the patient is suffering from an bacterial infection.
- ✓ Know the site of infection(GI,RT,UT).
- ✓ Take the required specimen from the patient.(blood , CSF, mid stream urine ,ear swap, vaginal discharge)

سحايا

specimen ل isolate لازم اعمل

- ✓ Identify the organism.

لازم اعرف نوع الاورجانيزم سواء عن طريقة الصبغة او من خبرتي بالاعراض

2-Remove the pathological barrier to cure (abscess ,obstruction).

site of actionيعني لازم اشيل اي شي ممكن يعيق الدوا من انه يوصل لل

3-Select the best drug : So that it reach site of infection in the therapeutic conc.

- ➢ Drug properties: PK,TI. efficacy + safety
- ➢ **Optimum dose & frequency**
- ➢ **the most appropriate route of administration**

4- The cost of therapy.

التكلفة بتهم المريض وما بتهم الطبيب عالاغلب

5-Patient factors:

1. Immune system.
2. Renal dysfunction.
3. Hepatic dysfunction.
4. Poor perfusion.
5. Age.
6. Pregnancy.
7. Lactation.
8. Concomitant medication.
9. Allergy.

لو عندي مثلا ٤ او ٥ اخيارات من الادوية
فبحدد شو الانسب حسب الفاكتورز هاي

زي مثلا ciprofloxacin ما رح
اعطية لمريضة تحت ال١٨ سنة
ولا رح اعطيه لا لحامل ولا لمرضعة
لانها رح تاثر عالطفل
او لو مافي بديل بنعطيها الدوا
وبنخليها تمشي عالرضاعة الصناعية

متزامن
هون قصده بالتزامن انه اعطي دوين مع بعض
فيتفاعلوا مع بعض او يكون الهم نفس الاعراض
الجانبية فيزيدوا احتمالية ظهور الاعراض هاي

يعني هاي الخطوات بالترتيب هي المثالية لكل علاج

- *Ideally*, the antimicrobial agent used to treat an infection is selected *after* the organism has been identified and its drug susceptibility established.

- However, in the critically ill patient, such a delay could prove fatal, and immediate *empiric* therapy is indicated.

بس احيانا بضطر ابلش بالعلاج قبل ما اعرف
نوع الاورجانيزم لانه وضع المريض ما بتحمل
وقت تحليل العينة

❑ Empiric therapy: is treating the patient without knowing the causative organisms & their sensitivity test.

- Immediate administration of the drug prior to identification of bacteria and sensitivity test.(or the specimens is obtained but lab result not available)

broad specrum of organism رح اعطي
يعني ببلش بالعلاج قبل ما تطلع نتيجة التحليل وبضل
اراقب وضع المريض عبين ما تطلع النتيجة

❑ Definitive therapy :

ideal

treating exactly the causative agent depending on its sensitivity test (done after receiving the results of test)

❑ Prophylactic therapy:

زي الفاكسين تبع السل TP

Used drugs to prevent an infection rather than to treat , to maintain health and prevent the spread of disease.

يعني مزيج من أدوية

Combination of antimicrobials

Advantages

نتجنب انه البكتيريا تقاوم الدوا

1. To delay or avoid the development of resistance.

   (Ex. Tuberculosis)

2. To broaden the spectrum of activity. (Mixed infection , severe unknown infection,). empiric

تعزيز/ تقوية

3. To obtain potentiation (synergistic effect).

   Ex: -B-lactams and aminoglycosides in endocarditis. Penicillin + Aminoglycosides

2separate IV bolus injection ,with time interval to avoid interaction.

- Co-trimoxazole.

co: conbination
tri: trimethoprene
oxazole: sulfumothoxazole

Disadvantages:

1. Concomitant administration of a second agent is usually bacteriostatic and may interfere with the action of the first drug that is bactericidal

هاي البكتيريا بتنافس البكتيريا الضارة عالغذاء واحيانا بتقتلها

2. Suppression of normal flora, so give higher chance for opportunistic infection (**superinfection**).
3. Increased incidence of adverse reactions.
4. Highly cost

بصير عندي سوبرانفكشن لانه خسرت الخط الدفاعي اللي هي n.f
ووقتها رح احتاج لدوا جديد لانه صار في مقاومة للدوا القديم

ومش كل ال combination صح
لانه ما بصير اجمع بين penicillin وال tetracyclen

Problems with antimicrobial agents

1. Drug resistance. (the major problem)

(if the maximal level of that antibiotic that can be tolerated by the host does not halt bacterial growth).

لما كل ما امرض اخد مضاد حيبطل فعال في جسمي

2. Drug-drug interaction drug either induct or inhibit antibiotics
3. Adverse effects.

Problems with antimicrobial agents

3. Adverse effects

a. Hypersensitivity; (not dose related)

e.g. Penicillin, cephalosporin.

b. Toxic effect (dose related)

High serum levels of certain antibiotics may cause Direct toxicity / Organ toxicity

e.g. Aminoglycosides(ototoxicity)

c. Superinfections:

alterations of the growth of normal flora of intestine, genitourinary tracts. Respiratory tract

Appearance of **a new infection** while treating an original infection (multiply C.difficile).

Mechanisms of Action of Antibacterial Drugs

الدكتورة حكت الامثلة بهاي الجزئية مش مطلوبة

Antimicrobial drugs affect various bacterial cellular targets:

1. Inhibit cell wall synthesis
2. Inhibit protein synthesis
3. Inhibit nucleic acid synthesis
4. Injury to plasma membrane
5. Inhibit synthesis of essential metabolites

sarah khader ^^

Artery Academy