Antimicrobial Stewardship Workshop, Naivasha November 2016

CATHETER- RELATED URINARY TRACT INFECTIONS: A common clinical case

The problem..

- In some settings, the first cause of HCAIs.
- Incidence of bacteruria: 3 to10% per day
- 10 to 25 % will develop a true infection
- 1 to 4 % with bacteremia.
- Around 30% of initial urinary catheterizations are unjustified in admitted patients!

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infections – CAB and CAUTI

- 15-25% of patients in general hospitals ⇒ urethral catheter inserted
- Hospital acquired UTI ⇒ 65-75% associated with catheterization
- Mortality ⇒ 3x higher when catheters are inserted
- Catheter-associated asymptomatic bacteriuria – ***CAB***
- Catheter-associated symptomatic UTI- ***CAUTI***

- Julius – a 64 years old man- has a long staying bladder catheter due a prostatic hyperplasia.
- He comes to your clinic saying that some days ago, the urine seemed to be more turbid, and his urologist prescribed him…

- … YES!!! You guessed it….
- Ciprofloxacin for 7 days…!!!
- He tell us that he had no symptoms, no fever, and that many times before he received different antibiotics due to similar reasons.

- *What to you think about Julius situation?*

- *What should be have done during the previous consultancy?*

DEFINITION

- **Significant bacteruria in a catheterized patient:** a colony count ≥ 10^2 CFU/mL

ETIOLOGY

- **Short duration (< 30 days).**

- *E. coli, K. pneumoniae, P. mirabilis, P. aeruginosa, S. epidermidis, enterococo y Candida.*

ETIOLOGÍA

- **Long duration (> 30 días).**

- *E. coli, K. pneumoniae, P. mirabilis, P. aeruginosa, S. epidermidis,* enterococo, *Candida, P. stuartii y M. morgagni*

- Sometimes polimicrobial infections.

- We must know our local epidemiology for correct treatment decisions!!!

DIAGNOSIS

When an indwelling catheter is in place pyuria and bateriuria are universal, so routine urinalysis or cultures are not recommended, only in case of symptomatic infections!!!.

But go on with Julius…

- Today – by day 6th of ciprofloxacin therapy- Julius presented two episodes of fever 38.3C with chills. He has a regular state of health now.
- ***What would be your decision?***

a) Interrrupt cipro and repeat the urine culture

b) Change to levofloxacin and control in 48 h

c) Prescribe IM ceftriaxone

d) Hospitalize Julius, take appropriate cultures and begin a new empiric ATB treatment

DIAGNOSIS OF UTI in catheterized patients

- **Clinical diagnosis: low predictive value**

1. Fever
2. Hypogastric pain
3. Lumbar pain
4. Unclear gastrointestinal symptoms
5. Bacteremia equivalents (chills) without another clear or suspeceted source.

- **Urine culture:** changing catheter, ≥ 10^2 UFC/mL.

Antibiotic therapy

- Criteria to select empirical treatment should include always:

✓ Personal history of etiologies

✓ Co-morbid conditions

✓ Previous antibiotics used:

➢ *Which ones?*

➢ *How frequently?*

➢ *How long?*

➢ *Last time?*

Antibiotic therapy

- According this data and the epidemiology of the institution where patient is in care, we could escalate as follows:
- Fluoroquinolones
- 3rd G Cephalosporins, without PAE coverage (cefriaxone)
- 3rd G Cephalosporins, with PAE coverage (ceftazidime)
- Piperacillin-tazobactam
- Carbapenems (BII),
- Colistin

Antibiotic therapy

- In certain serious clinical or epidemiological situations, everyone of them could be combined with aminoglicosides.

- Duration: 7- 14 days depending clinical presentation and outcome

Resolving Julius…

- Julius received piperacillin/tazo empirically
- 48 h later, both urine and blood cultures developed *K. pneumoniae* R to quinolones and 3rd G Ceph; and S to pip/tazo, carbapenems, amikacine y colistin
- After 14 days of treatment he was discharged from hospital…

- I love happy ends!!!!

- ***Thanks a lot for your participation!***
- ***Asante sana!***