Troubleshooting tools in medicines review - PIM-CHECK© training

Interactive part - parallel workshops

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30 September – 1 October 2016, Bucharest, Romania
Website  
www.pimcheck.org/en/

Webmobile application  
app.pimcheck.org
Webmobile application

app.pimcheck.org
4 Kind of DRPs

1. Over-Prescriptions

Drugs that may exacerbate heart failure

Avoid prescribing drugs* that may exacerbate HF, drugs that are rich in sodium** and antiarrhythmics (except for digoxin and amiodarone) in heart failure patients

Rationale

Risk of sodium and water retention, HF exacerbation, increased risk of hospitalisation for HF, and sudden death.

Remarks

* Non-exhaustive list of drugs that may exacerbate HF: NSAIDs (except low-dose aspirin) and COX2-inhibitor: by hydro-sodium retention, antiarrhythmic drugs (except digoxin and amiodarone), tricyclic antidepressants, carbamazepine, corticosteroids (oral or inhaled), glitazones, and calcium inhibitors (except amldipine and felodipine) by negative inotropic effects, moxonidine, and sotalol

** Non-exhaustive list of sodium-rich drugs: sodium alginate, bicarbonate, diphasphate, effervescent drugs, fosfomycin, penicillins, phosphate, piperacillin, salicylate.

References

- ESC 2016: Acute and Chronic Heart Failure
- ACCP/AHA 2013: Guideline for the Management of Heart Failure
- BMJ 2013: cardiovascular events and sodium containing effervescent, dispersible, and soluble drugs
4 Kind of DRPs

2. Under-prescriptions

Dyslipidaemia, hypercholesterolaemia: start statins as a 1st-line treatment

Prescribe statins as a 1st-line treatment in case of mixed dyslipidaemia or hypercholesterolaemia when pharmacological treatment is necessary.

Rationale

Prevention of heart disease.
Allows a decrease in the LDL-c and triglycerides and an increase in the HDL-c.

Recommendations

- Dosage: *Maximum suggested dosing regimen*: maximum tolerated dose making it possible to achieve the target LDL-c level, based on the cardiovascular risk (*see item 5*).

References

- CCSG 2012: Diagnosis and Treatment of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult
- ACC/AHA 2013: Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults
- ESC 2011: Dyslipidaemias (Management of)
4 Kind of DRPs

3. Drug-Drug interactions

Anti-epileptic and DDI

Rationale

Anti-epileptics (except gabapentin, pregabalin, vigabatrin and levetiracetam), at least partially, undergo hepatic metabolism. Some anti-epileptics are enzyme inducers or inhibitors. Risk of toxicity, imbalance or ineffectiveness of various treatments.

Recommendations

- **Alternative**: Favor a therapeutic alternative or propose a therapeutic drug concentration monitoring of the anti-epileptics and/or associated treatments.

Remarks

- **Enzyme-inducing anti-epileptics**: carbamazepine, lacosamide, lamotrigine, oxcarbazepine, phenytoin, primidone, topiramate, zonisamide
- **Enzyme-inhibiting anti-epileptics**: valproic acid, topiramate, felbamate

Useful links

- [[HUG 2014: Drug-drug interactions, cytochromes P450 et P-glycoprotein (In French)]]

References

- ILAE 2008: Antiepileptic drugs best practice guidelines for therapeutic drug monitoring
- Potts AR, et al. The importance of drug interactions in epilepsy therapy. *Epilepsia* 2002
4 Kind of DRPs

4. Others

**Obese patients: increase doses of injectable antithrombotic agents (LMWH/heparin/fondaparinux)**

增加患有肥胖症的患者注射抗凝血药物的剂量（LMWH/heparin/fondaparinux）

**Rationale**

Obesity is a risk factor for venous thromboembolism.

**Recommendations**

- **Dosage**: Daily suggested dosing regimen
  
  Use the total body weight to determine the doses to be administered.

- **Prophylactic treatment**: Increase the dosing regimens by 30% if body mass index (BMI) ≥ 40 kg/m².

- **Curative treatment**: subcutaneous administration (adapt the needle size) of enoxaparin BID and unfractionated heparins TID. Monitor anti-Xa activity for patients with BMI ≥ 40 kg/m².

- **Fondaparinux recommended dose** in patients over 100 kg with venous thromboembolism: 10 mg QD, administered subcutaneously.

**References**

Functions

- Get to pimcheck.org website
- Find items saved as favourites
- Find the list of ALL items included in PIM-Check, those ALREADY read, and those unread

Screening

Favourites

Items list

PIMcheck.org

Screening function
Let’s start to use it!

http://app.pimcheck.org/#/recommandations/recherches/screening
Clinical case

Mr X, 65 years old

▷ Admission pattern
  ◦ Cough, fever
  ◦ Respiratory depression
  ◦ Confusional state

▷ Medical diagnostic
  ◦ Community acquired pneumonia

▷ Past medical history
  ◦ Type 2 diabetes mellitus
  ◦ High blood pressure
  ◦ Persistent atrial fibrillation

▷ Physical examination
  ◦ Fever, tachycardia
  ◦ BP: 152/88
  ◦ Weight: 99.5kg

▷ Laboratory test results
  ◦ eGFR: 37ml/min/1.73m²
  ◦ White blood cells: 44.5
  ◦ CRP: 344
  ◦ Total cholesterol: 5.4mmol/L
  ◦ HDLc: 1.3mmol/L

Current treatment:

- Atenolol 50 mg – QD
- Losartan 100 mg – QD
- Rivaroxaban 20 mg – QD
- Clarithromycin 500 mg – BID – 15 days
- Augmentin 1.2g – QID – until further
- Insulin aspart according to blood-sugar level – TID
- Insulin degludec 35UI – QD
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**Over-prescriptions**

**Under-prescriptions**

**Interactions**

**Other PIMs**
Clinical case

Mr X, 65 years old

- **Admission pattern**
  - Cough, fever
  - Respiratory depression
  - Confusional state
- **Medical diagnostic**
  - Community acquired pneumonia
- **Past medical history**
  - Type 2 diabetes mellitus
  - HBP
  - Persistent atrial fibrillation

- **Physical examination**
  - Fever, tachycardia
  - BP: 152/88
  - Weight: 99.5 kg

- **Laboratory test results**
  - eGFR: 37 ml/min/1.73 m²
  - White blood cells: 44.5
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  - Total cholesterol: 5.4 mmol/L
  - HDLc: 1.3 mmol/L

**Current treatment:**
- Rivaroxaban dose adjusted
- Check influenza/pneumococcal vaccinations

- Atenolol 50 mg – QD
- Losartan 100 mg – QD
- Rivaroxaban **20 15** mg – QD
- Clarithromycin 500 mg – BID – 7 days
- Augmentin 1.2 g – QID – 7 days
- Insulin aspart according to blood-sugar level – TID
- Insulin degludec 35 UI – QD

+ modification of the term of antibiotics
+/- stopping clarithromycin

+ HbA1c?
Restart metformin?
Start statins, calcium/Vitamin D?
THANK YOU FOR YOUR ATTENTION

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