ANTIBIOTIC STEWARDSHIP IN LONG-TERM CARE FACILITIES

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RECENT REVIEWS ON THE TOPIC

- Morrill HJ et al. Antimicrobial Stewardship in Long-Term Care Facilities: A Call to Action. **JAMDA** 17 (**2016**) 183.e1e183.e16
- Dyar OJ, Pagani L, Pulcini C. *Strategies and Challenges of Antimicrobial Stewardship in Long-Term Care Facilities*. **Clin Microbiol Infect; 2015**; 21: 10–19.
- Crnich *et al*. Optimizing Antibiotic Stewardship in Nursing Homes: A Narrative Review and Recommendations for Improvement. **Drugs Aging** (**2015**) 32:699–716
- Fleming et al. Antibiotic Prescribing in Long-Term Care Facilities: A Meta-synthesis of Qualitative Research**. Drugs Aging** (**2015**) 32:295–303
- Nicolle LE. *Antimicrobial stewardship in long term care facilities: What is effective?* **Antimicrob Resist Infect Control. 2014**; 3: 6.
- Rhee SM, Stone ND. *Antimicrobial stewardship in long-term care facilities*. **Infect Dis Clin North Am. 2014**; 28: 237-246.

1. ANTIBIOTIC USE

IN LTCFs

LTCFs in Europe

- 3.7 million residents in 2010
- Will increase in the years to come

Very high antibiotic use

- **Prevalence** on any given day: **3-15%**
- 80% of residents with a suspected infection are prescribed antibiotics
- 50-80% of residents receive at least one AB course per year
- Huge variations between LTCFs (x 5-10)

Motives for AB use

Suspected

1. UTI: 32-66%
2. RTI: 15-36%
3. SSTI: 13-18%

Patterns of antibiotic use

- Quite similar to primary care patterns
- Except for higher use of parenteral route (10-20% in France for example)

Are AB prescriptions appropriate ?

- The one-third rule…

What about durations of treatments?

- Frequently too long
- >7 days in half of the cases in a Canadian study (*Daneman et al. 2013*)
- In this study: duration was dependent on the prescriber, not the patients' characteristics

=> (Big) room for improvement !

2. BACTERIAL RESISTANCE

IN LTCFs

Prevalence of MDR bacteria

- High, sometimes higher than in hospitals
- Residents often colonised for several months
- **LTCFs= MDR bacteria ‘reservoir’**

3. ANTIBIOTIC PRESCRIBING: A CHALLENGE IN LTCF

1. Difficult decision-making process: high level of diagnostic uncertainty

- Difficulties in getting relevant clinical information (hearing loss, dementia…)
- Clinical findings often atypical and non specific
- Lack of onsite diagnostic facilities
- And difficulties in getting good quality samples/ investigations
- Colonisation / infection

2. Healthcare organisation / culture

Medical staff

- Multiple doctors
- Lack of onsite doctors to provide immediate clinical assessment
- Unfamiliarity with patients
- Half of antibiotics are prescribed over the phone

Nursing staff

- Shortage of staff
- Rapid staff turnover
- Insufficient training on infection
- Nurses are the cornerstone of care in LTCFs, and doctors rely on the information they provide to prescribe antibiotics

Antibiotics are sometimes prescribed to avoid hospitalisation or a revisit

3. Lack of local resistance data

Data available in < 20% of the cases in European LTCFs

The same is true for antibiotic use data

4. High prevalence of bacterial colonisation

- Wounds
- Urine
  - 100% if catheter
  - No catheter: 25%-50% (women) and 15%-40% (men)
- RTI if COPD

- Systematic samples = driver for unnecessary antibiotic use

5. AB use and end-of-life care

- Controversial topic
- ABs are largely prescribed in that situation (mostly RTI and dementia)
- Positive clinical impact not proven
- Advance care plans might be helpful

6. Patients' and families' expectations

- Same problems as in primary care practice

7. Guidelines

- Often not available in LTCFs
- Rarely include the use of complementary investigations, and both diagnostic and therapeutic aspects

- Concern that the usual guidelines are generally not applicable to the older LTCF population

- ‘Frailty’ concept

- ‘Better safe than sorry’ concept

=> overprescription

8. Lack of awareness

- Bacterial resistance is invisible
- Impact overlooked
- Short life expectancy
- AMS is not a priority compared to other topics

4. STRATEGIES TO IMPROVE ANTIBIOTIC USE

IN LTCFs

Recommendations ?

- Specific evidence-based guidelines regarding prudent antibiotic use in LTCFs are lacking

1. No AB prescription without a clinical examination

- Association between absence of clinical examination and:
  - Increased AB use
  - More AB misuse
- Important to document indication in the medical record

2. Education

- All **healthcare professionals**
  - **Doctors** (including medical coordinators): CME, audits and feedback, AB prescribing profiles
  - **Nurses**:
    - When is a bacterial infection likely ?
    - When should AB not be prescribed
    - Indications for microbiological investigations
- **Patients** and their **families**: bacterial resistance, situations when an AB is not needed
- http://www.sante.gouv.fr/kit-pedagogique-pour-l-usage-des-antibiotiques-en-etablissement-d-hebergement-pour-personnes-agees-dependantes-ehpad,13615.html
- http://www.plan-antibiotiques.sante.gouv.fr/Kit-antibiotiques-en-EHPAD-ARS-Ile.html

3. Where to start ?

Global strategy

- Target situations where AB misuse is frequent
- And where improving prescribing will be easier
- Stepwise approach
- Change the system

Situations where misuse is frequent

- AB prophylaxis (UTI)
- Colonisation
- No guidelines
- Broad-spectrum AB
- Topical AB
- Durations of treatment

4. Microbiological investigations

- Urine dipsticks
- Urine cultures
- Wound swabs

- Only if prescribed by a doctor, after a clinical examination
- Standardised diagnostic “ infection kits”, with clear indications ?

5. Reassess AB prescriptions around day 3

Especially if:

- Potentially severe infection: pyelonephritis, prostatitis, pneumonia…
- Diagnosis uncertainty
- Adaptation to microbiology results

6. Major role of microbiology lab

- Reporting:
  - Educational messages
  - Restrictive reporting (no reporting or limited number of antibiotics)

7. Rapid diagnostic tests

- Ideally Point-Of-Care (POC)
- CRP ?
- Influenza ?

8. Innovative strategies need to be tested!

- Infection champion
- AMS team
- ID advice available on the phone or using telemedicine
- Computerised decision support systems
- ...

- Process and outcome indicators to monitor your program +++

9. Regulatory measures

- Certification/accreditation, accountability
- LTCF medical coordinator
- Integrate AMS in existing quality/safety/infection prevention and control programmes in the LTCF, and existing primary care AMS programmes
- Should be part of regulatory requirements

Any question?

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