


Antibiotics use towards the end of life

Jack Fairweather

Scottish Clinical Leadership Fellow
Renal and GIM Registrar

 @JAAFairweather
 jackfairweather@nhs.net



ROYAL COLLEGE OF
PHYSICIANS AND
SURGEONS OF GLASGOW

Antibiotics use towards the end of life

Infection in the dying is common

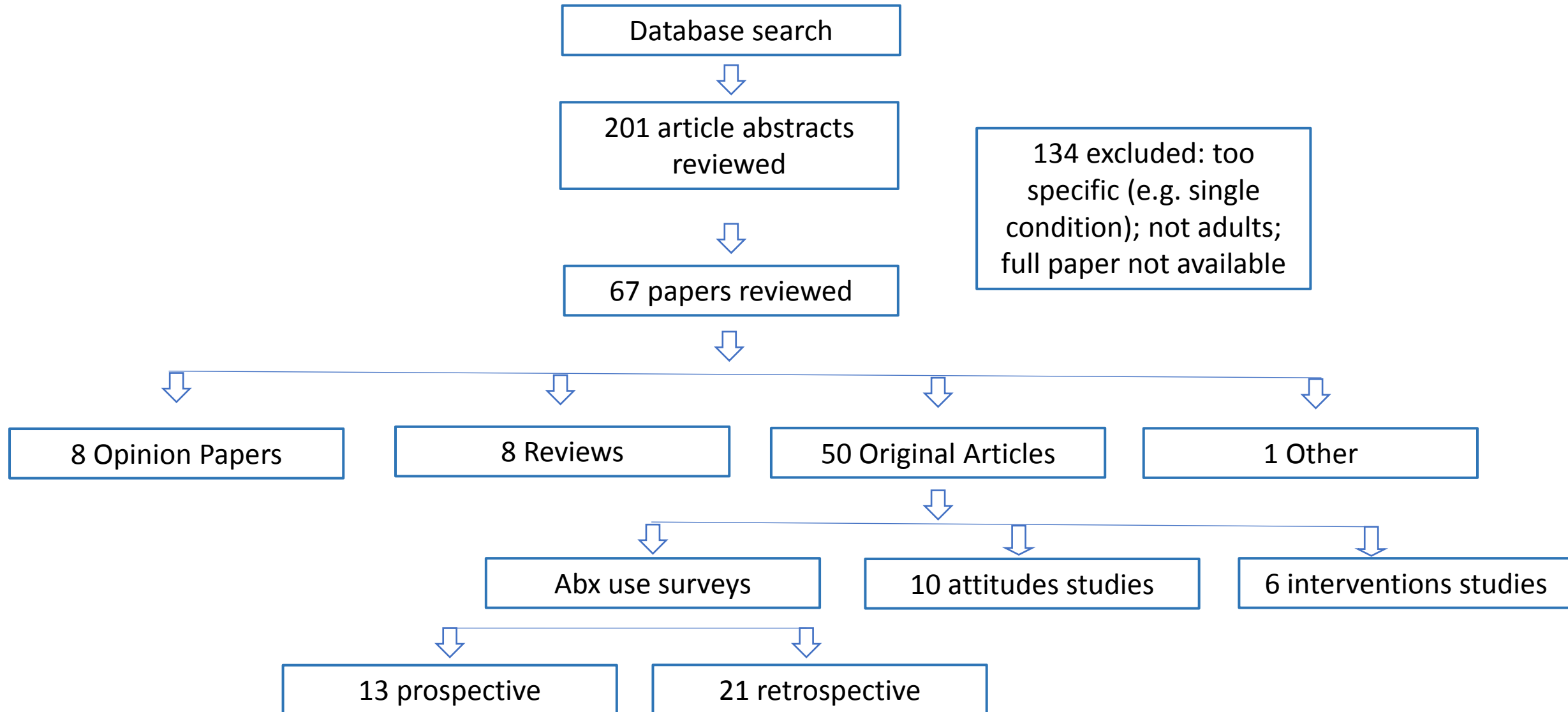
Significant uncertainty regarding the role of antibiotics and impression of wide variation in practice, with probable excess of non-beneficial treatments

- SAPG Good practice recommendations for antimicrobial use in frail elderly people April 2018
- SAPG Education meeting - Palliative Care discussion November 2018
- SAPG working group March 2019

Literature review

- Review studies where antibiotic use in end-of-life populations has been examined
- Broad outline of background
- Identify common themes
- Consider research gaps

Literature review



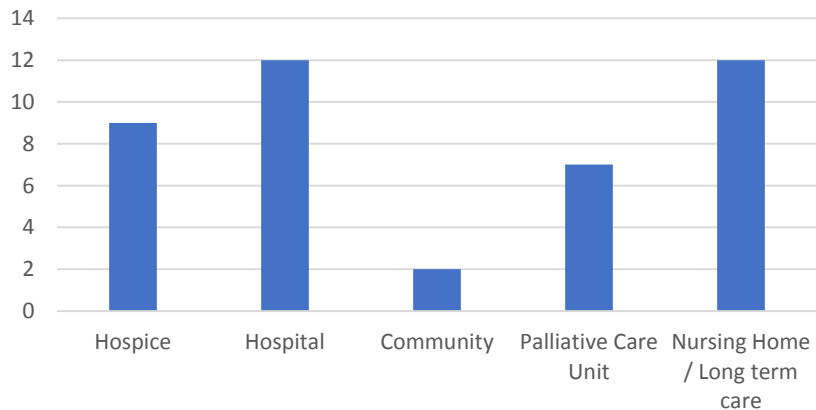
Antibiotics use towards the end of life – themes / issues

- Definition
- Populations / diagnoses
- Setting
- Prevalence antibiotic use
- Goals of therapy / benefits
 - Survival
 - Symptom control
- Infection being treated
- Adverse effects
- Attitudes – patients, families, clinicians
- Interventions / Tools
- Recommendations

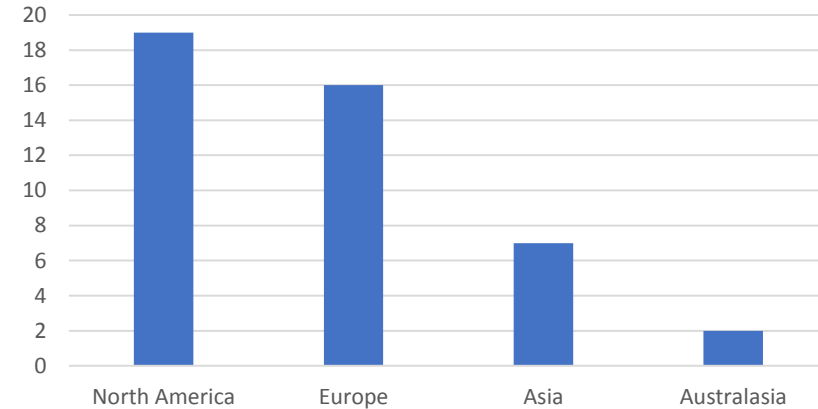
Definition and populations / diagnoses

- Definition “towards end-of-life” variable
- Final admission, duration before death examined retrospectively

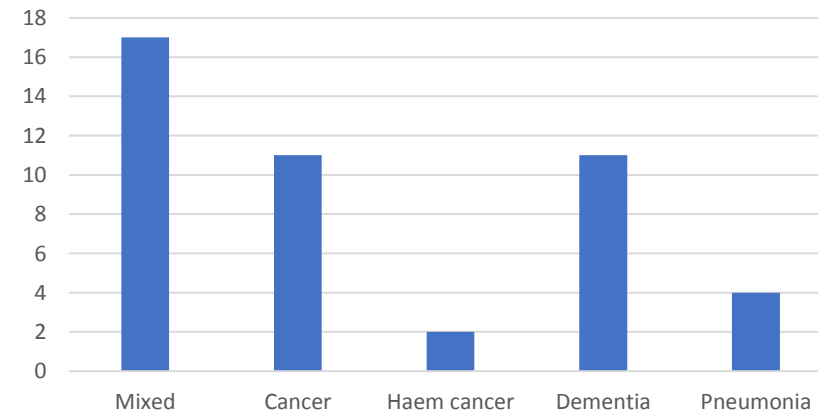
Setting



Region



Condition



Antibiotics use

- Wide variation in use reported
 - Heterogeneity in research method
 - Significant population differences
- 4 – 90 % (median 52%) of study populations received Abx (n=23)
- 72 – 98 % (median 87.5%) of “infections” treated with Abx (n=8)

Goals of therapy – survival

- Significant variation in reported outcomes, for both prospective and retrospective studies
- Comparison between “no antibiotics” and “antibiotics” groups difficult
- 12 studies presented survival outcomes
 - 7 reported improved survival with Abx
 - 5 reported no difference in survival with/without Abx
- No survival benefit of IV over oral Abx
- Early responders more likely to survive

Goals of therapy – symptom improvement

- Heterogeneity in study method and reporting
 - Usually retrospective case note review
 - Few prospective objective symptom scoring
 - Varying definitions of symptoms and inclusion of “discomfort”
 - Usually uncontrolled
- 6 studies reported symptoms outcomes
- Reported symptom improvement in 15 – 54 % cases
- Little comparison with non-end-of-life antibiotic-treated population
- Conflicting data re levels of discomfort

Site of infection and response

- 10 studies examined site of infection involved
 - Urine and chest most frequent
 - Skin and soft tissue, GIT, ENT and bloodstream all at lower frequencies
 - Not dissimilar to general population
- Pneumonia increasing proportion nearer to end-of-life
- UTI treatment most likely site to result in symptomatic improvement (17 – 79% response rate)
- Lowest rate of symptomatic improvement for bloodstream infection (0 – 15.7%)

Adverse effects

- Only 2 papers reported antibiotics adverse event information
 - Retrospective case-note review likely to lack sensitivity for side-effect reporting
 - One paper reported 4% adverse event rate, another survey of clinicians identified much higher reported rates – 62% diarrhoea, 47% N&V
- Comments widespread
 - Side-effects; invasive devices; prolongation unpleasant dying process; AMR; cost; investigation burdens; instilling false hope and neglecting palliation; isolation precautions for AMR

Attitudes – patients, families, and clinicians

- General trend towards favouring antibiotics, but significant variation amongst groups
- Clinicians consider antibiotics overused but consider that patients and families want them

Intervention studies

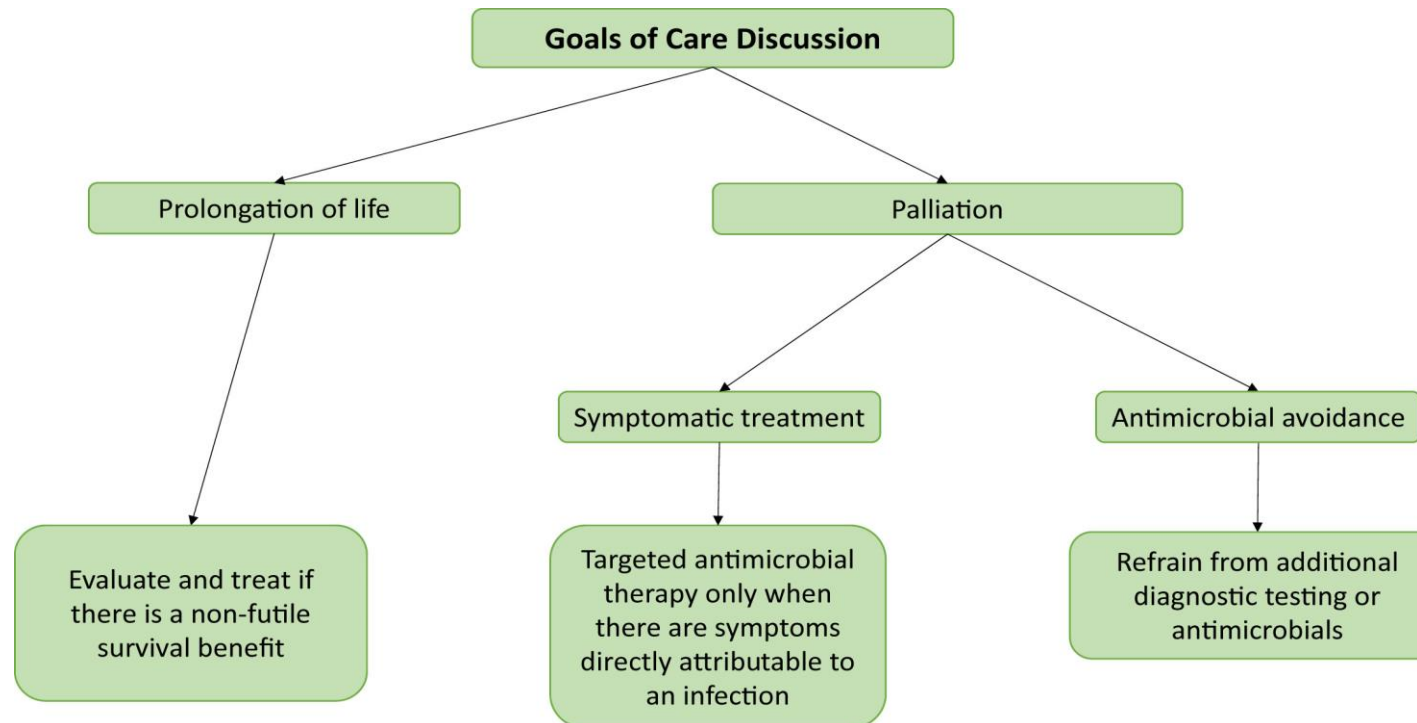
- 10 studies examined tools related decision-making or specific interventions related to antibiotics use towards end of life
- Mixed evidence for advanced care directives
- Palliative Care Phase tool may identify those more likely to benefit
- Subcutaneous antibiotic administration and home hospice antibiotics may improve tolerability of antibiotics

Recommendations

| | |
|-----------------------------------|--|
| Communication and decision making | Defining goals of therapy important |
| | Shared decision making |
| Infection specifics | Fever / inflam response in cancer not necessarily infection |
| | Abx therapy based on sensitivities associated with better outcomes, so do use cultures |
| | UTI treatment more likely to effect symptomatic improvement |
| Research and guidelines | Further study necessary, consider RCT |
| | Guidelines warranted |

Recommendations

Antimicrobial Use at the End of Life



Summary

- Reasonable literature base although numerous small studies asking similar questions but with significant population and methodological heterogeneity
- Huge variation in attitudes, practice, and outcomes
- Difficult to bring the evidence to the bedside
- Variation and uncertainty compounds difficulty with shared-decision making



Next steps

- Role for guidelines or framework
 - Systematic review
 - Working group
- Relative paucity of literature looking at antibiotics use towards end of life in acute setting

Antibiotics use towards the end of life

Jack Fairweather

Scottish Clinical Leadership Fellow
Renal and GIM Registrar

 @JAAFairweather
 jackfairweather@nhs.net



ROYAL COLLEGE OF
PHYSICIANS AND
SURGEONS OF GLASGOW