Does using Antibiotics in End-of-Life care improve outcomes? A Rapid Umbrella Review

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Introduction

The use of antibiotics in **end-of-life (EOL)** care is a complex and debated topic, with research exploring their **impact on survival**, **symptom relief**, **quality of life**, and broader public health concerns such as **antimicrobial resistance**. Evidence from systematic reviews and meta-analyses suggests that **antibiotics are frequently prescribed to EOL patients**, often with the intention of symptom management or prolonging life, **but the benefits are inconsistent** and **context dependent**.

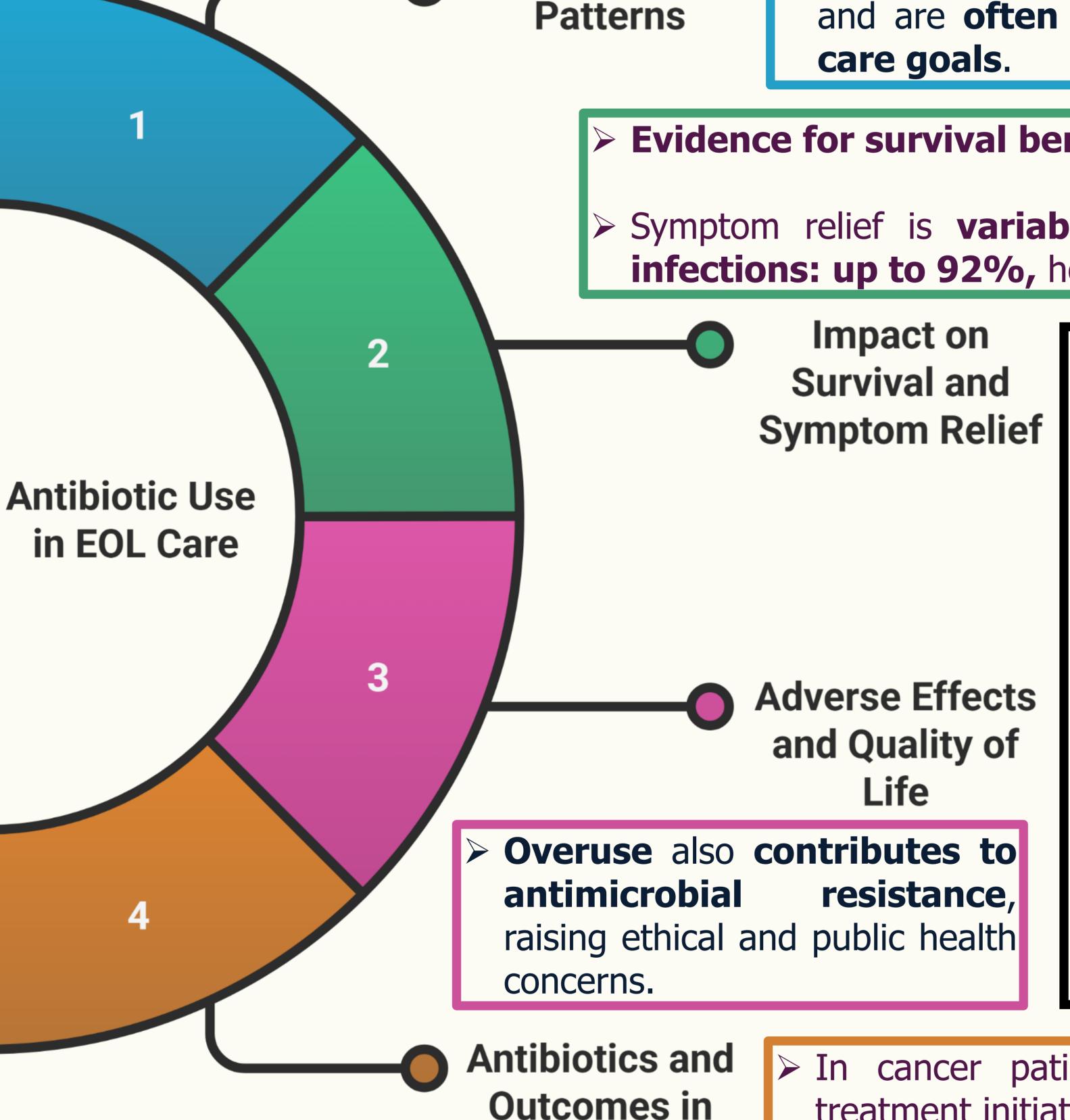
Methods

Our search in PubMed, EMBASE, Web of Science and Google Scholar provided 40 results of existing reviews on topic of interest, and it included 8 duplicates. Further 16 articles were not appropriate and hence 16 studies were included. AMSTRAR 2 criteria was used to assess quality of Reviews. We assessed the consistency of findings across reviews and evaluated overlapping primary studies using the Corrected Covered Area (CCA) method.

Results

- Antibiotic use is common in EOL care, with studies reporting that over 50% of terminally ill patients receive antibiotics during their final days or weeks.
- Prevalence and
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 > Prescribing patterns vary widely by diagnosis, care setting, and patient age, and are often not aligned with documented patient preferences or palliative care goals.
 - > Evidence for survival benefit from antibiotics in EOL care is limited and inconsistent.
 - Symptom relief is variable and appears most pronounced in cases of urinary tract infections: up to 92%, however, it is not so in cases of pneumonia.



Oncology

Current Research Gaps				
Topic/ Outcome	Cancer (EOL)	Advanced Dementia	Mixed EOL Populations	Immuno- -therapy
Survival (EOL)	8	5	7	10
Symptom Relief	3	2	4	GAP
Adverse Events	2	GAP	1	GAP
Quality of Life	1	GAP	1	GAP
Antimicrobial Resistance	2	1	2	GAP

In cancer patients on immune checkpoint inhibitors, antibiotic use around treatment initiation is linked to poorer survival outcomes.

Discussion

- > The current evidence does not support routine antibiotic use in EOL care for the purpose of improving survival or overall symptom burden, except in select cases such as symptomatic urinary tract infections.
- > The potential for harm, including adverse drug events, reduced quality of life, and increased antimicrobial resistance, must be weighed against any possible benefit.
- > In oncology, particularly among patients receiving immunotherapy, **antibiotics may actually worsen outcomes** by disrupting the gut microbiome and impairing immune response.

For Collaborations



Conclusion

Antibiotic use during end-of-life care is widespread, but its benefits are limited and must be balanced against potential harms and the risk of antimicrobial resistance.

The literature supports a move toward **individualized, goal concordant** prescribing, **improved communication**, and **integration of stewardship principles** into palliative care.

