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TOOLS FOR PRACTICE

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Asymptomatic bacteriuria in the elderly: Don't drug the bugs?

CLINICAL QUESTION

In elderly, does asymptomatic bacteriuria (ASB) cause altered mental state and will treating ASB improve clinical outcomes?

BOTTOM LINE

Due to important evidence limitations, it is not confirmed that ASB, or even Urinary Tract Infection (UTI), is clearly associated with altered mental state. Treating ASB does not improve clinical outcomes (including altered mental state) but may increase adverse events from 1% to 7%. In elderly patients with ASB and altered mental state, antibiotics should be avoided without clear signs/symptoms of infection.

EVIDENCE

- Results statistically significant unless stated.

Is any bacteriuria associated with altered mental state?

- 3 systematic reviews (5-29 observational studies; 2630-16,618 patients).[1-3]
    - UTI and altered mental state:
        - Two conclude association is unclear.[1,2]
        - One[3] reports an association odds ratio=2.67 (2.12–3.36).

        - Unreliable as UTI case-definition often includes altered mental state/delirium (without infection symptoms).[1-3] Example, in one study ≥57% UTI diagnoses had no UTI symptoms.[3]
    - ASB and altered mental state:
        - No association in one observational study.[3]

Does treating ASB improve/prevent clinical outcomes?

- 5 systematic reviews (3-9 randomized controlled trials [RCTs]; 328-1087 patients)[4-8] of antibiotic treatment versus placebo/no-treatment. Most recent (9 RCTs; 1087 patients) x3-108 months:[4]
    - Symptomatic UTI, mortality: No difference.
    - Adverse effects (examples diarrhea, rash, candidiasis): 6.5% versus 0.7% no antibiotics.
    - Others found similar.[5-8]

Does treating ASB improve altered mental state?

- RCT 58 ASB long-term care patients, norfloxacin versus placebo (7 days), followed 3-months (not included above).[9]
    - Mental state/function: No difference.
- Two observational studies, 150-343 newly diagnosed delirious elderly found no difference in functional[10] or delirium[11] recovery when given antibiotics versus none.

Do antibiotic reduction interventions for ASB affect patient outcomes?

- Three RCTs (2 cluster-RCTs[12,13] with 22 long-term care centers 1-year each, and 214 newly admitted patients 7-days[14]).
    - Reducing antibiotic prescribing does not increase hospitalizations, mortality, or adverse events.[12-14]

CONTEXT

- Ordering urine culture is associated with antibiotic use.[15]
- ASB is common in elderly: 5-20% in community age>80 (females>males) and institutionalization (25-50% women/15-40% men).[16,17]
- ASB guidelines[16] recommend:
    - Avoiding ASB treatment in elderly without clear infection signs/symptoms.
    - Assessment for other causes; careful observation; attention to contributing factors like dehydration.

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