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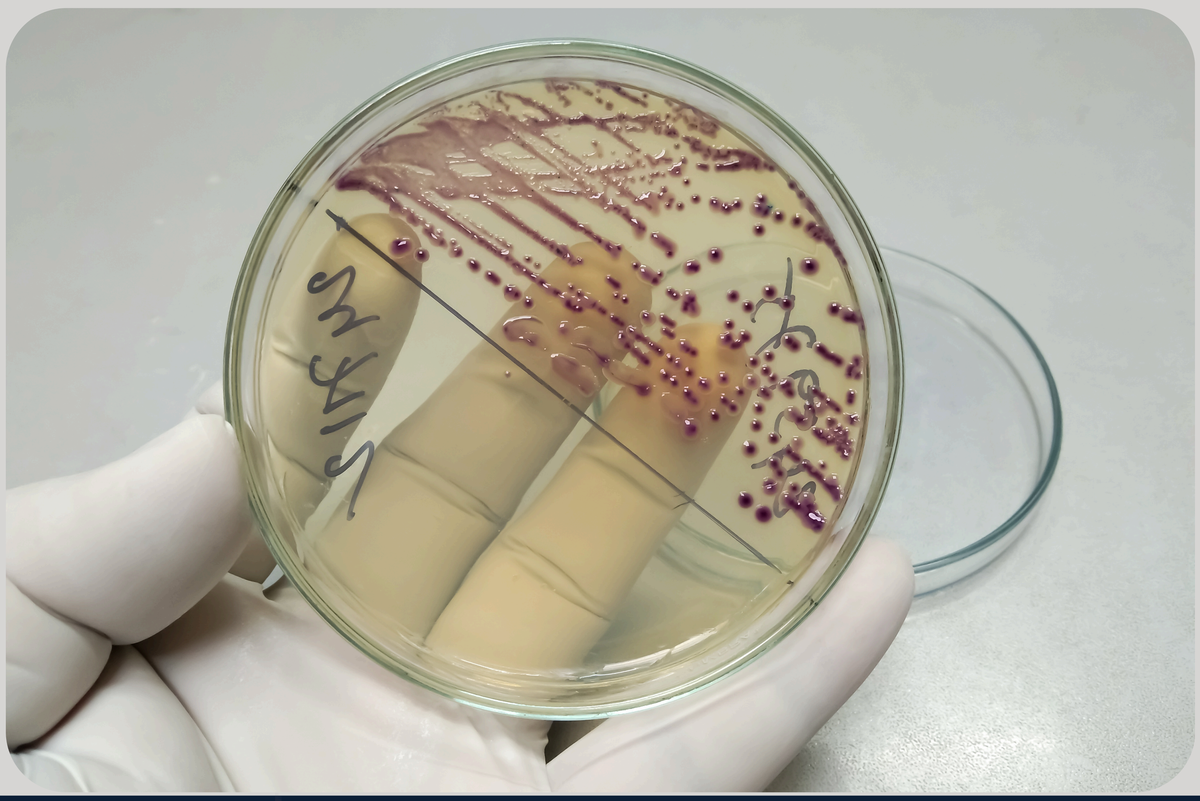


Weekly Antimicrobial Prophylaxis for Recurrent Symptomatic Urinary Tract Infections

(A Randomized Controlled Trial)

Introduction

- Recurrent symptomatic urinary tract infections (R-UTIs), particularly complicated R-UTIs, may result in morbidity, hospitalization and mortality.
- Continuous or post coital antimicrobial prophylaxis (AP) is recommended for recurrent simple cystitis, whereas no consensus of AP is made for complicated R-UTIs.
- Weekly AP were reported to reduce R-UTIs, but its efficacy, and emergence of antimicrobial resistance (AMR) on patient with R-UTIs in Thailand, high burden of AMR remains unclear.

Research Objectives

- Efficacy of weekly AP in reducing the incidence rate of recurrent symptomatic, including simple cystitis and complicated R-UTIs.
- The selective pressure of weekly AP on incidence of emergent multidrug-resistant (MDR) uropathogens
- R-UTI burden in length of total, and UTI-related hospitalizations, total antimicrobial consumptions

Method

Research Design

A single-center, randomized, open-label controlled trial.

Participants

Patients with R-UTIs in medicine and urology units, were randomized 1:1 to once weekly AP (intervention group) or no AP (control group) and followed for 6 months, death or loss to follow-up, between 2022 and 2024.

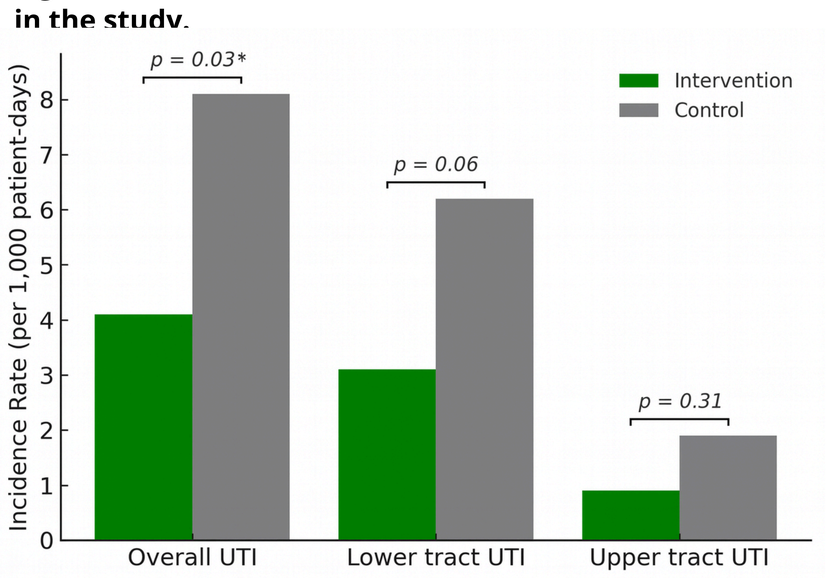
Data Collection

Patient demographics, comorbidities, urological conditions, UTI-related manifestations, adherence, hospitalization, antibiotic consumption, and adverse drug effects.

- On-site study visit & assessments at Month 2 and 6
- Phone call visits at Week 2, 4, Month 3, 4, and 5
- Follow-up urine cultures at Month 2 and 6

Results

Figure 1. Overall and stratified UTI incidence rates in the study.



Abbreviation: *statistical significance

Table 1. Incidence rates of MDR isolates of the study participants (N= 29)

Categories	Group	Total FU Days	Total Episodes	Incidence Rate[1]	95% CI	P-value
MDR isolates	Intervention	2,160	4	1.9	0.5-4.7	0.22
	Control	2,250	8	3.6	1.5-7.0	

Abbreviations: MDR, multi-drug resistant; FU, Follow up; CI, Confidence interval, [1]per 1,000 patient-days

Table 2. Hospitalization and antimicrobial consumption in the study.

Categories	Intervention (N = 19)	Control (N=19)	P-value
Length of hospitalizations, median (days)	7	18	0.03*
Length of hospitalization due to UTI, median (days)	17.5	10	0.4
Days of therapy, median (days)	24	10	0.03*

Abbreviations: UTI, urinary tract infection; N, number participants, *statistical significance

Results

- All 38 participants (n=19 per group) were enrolled and followed to study endpoints.
- Population characteristics, urological condition were comparable between both groups, with no significant differences.
- The AP used in the intervention group included nitrofurantoin, cotrimoxazole, ciprofloxacin, sitafloxacin, cefuroxime, and cefixime, by initial isolate susceptibility.

Discussion

- Published RCTs reported weekly AP reduced R-UTIs and hospitalization without increased antimicrobial resistance in spinal cord injury patients with low AMR settings.
- The present study also demonstrated weekly AP effectively reduced R-UTIs, hospitalization, without increased antimicrobial resistance in adult medical and surgical patients in Thailand.
- The selective pressure of weekly AP may be limited, despite high baseline MDR rates.

Conclusion

- **Weekly antimicrobial prophylaxis is effective, in recurrent cystitis, and complicated UTIs among adult patients, without increased antimicrobial resistance.**
- **Further large-scale studies are warranted to confirm efficacy and safety.**

Reference

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