

## INTISARI

### Latar Belakang:

Infeksi saluran kemih (ISK) merupakan infeksi bakteri tersering secara global. Studi *Global Burden of Disease 2021* mencatat sekitar 4,49 miliar kasus ISK, dengan angka kejadian mencapai 5.531,88 per 100.000 penduduk dan kecenderungan peningkatan hingga tahun 2050. Insiden ISK di Indonesia mencapai 90–100 kasus per 100.000 penduduk per tahun. Terapi antibiotik definitif berbasis hasil kultur penting untuk mengoptimalkan kesembuhan dan menekan resistensi antimikroba, namun implementasinya masih belum optimal.

### Tujuan:

Untuk mengevaluasi hubungan antara kesesuaian terapi antibiotik definitif terhadap kesembuhan ISK pasien dewasa.

### Metode:

Penelitian ini menggunakan data sekunder dengan desain kohort retrospektif. Subjek adalah pasien dewasa ( $\geq 18$  tahun) yang didiagnosis ISK berdasarkan gejala klinis dan hasil kultur urin. *Inception kohort* Adalah saat diagnosis ISK ditegakkan berdasarkan hasil kultur. Kelompok terpapar adalah subjek dengan terapi antibiotik definitif sesuai. Kesembuhan dievaluasi hingga maksimal hari ke-14 dan diklasifikasikan sebagai sembuh atau tidak sembuh. Analisis statistik dilakukan menggunakan uji *Chi-square* dan *Fisher's Exact* dan perhitungan *Relative Risk* (RR), dengan  $p < 0,05$  dianggap bermakna.

### Hasil:

Penelitian menganalisis 116 pasien dewasa dengan ISK. Kesembuhan ISK tercapai pada 74(63,8%) pasien. Sebanyak 63 pasien (54,3%) menerima terapi definitif yang sesuai dan 53 pasien (45,7%) tidak sesuai. Kesesuaian terapi definitif berhubungan dengan kesembuhan ISK yang lebih tinggi (RR 1,86; 95%CI 1,46–3,95;  $p < 0,001$ ) dan penyesuaian antibiotik  $\leq 12$  jam dari empiris ke definitif setelah ada hasil kultur juga berhubungan dengan peningkatan kesembuhan (RR 1,49; 95%CI 1,19–11,98). Pada analisis multivariat, kesesuaian terapi definitif tetap berasosiasi independen dengan kesembuhan (aRR 1,83; 95%CI 1,27–2,63;  $p = 0,001$ ), demikian juga interval penyesuaian antibiotik  $\leq 12$  jam (aRR 1,35; 95%CI 1,29–1,72;  $p = 0,016$ ).

### Simpulan:

Kesesuaian terapi antibiotik definitif memberikan peluang kesembuhan 1,83 kali lebih tinggi dari yang tidak sesuai.

**Kata kunci:** Infeksi saluran kemih, antibiotik definitif, kesesuaian terapi, kesembuhan, resistensi antimikroba

## ABSTRACT

### **Background:**

Urinary tract infection (UTI) is the most common bacterial infection worldwide. The Global Burden of Disease 2021 study reported approximately 4.49 billion UTI cases, with an incidence of 5,531.88 per 100,000 population and a projected increasing trend until 2050. In Indonesia, the incidence reaches 90–100 cases per 100,000 population per year. Definitive antibiotic therapy based on culture results is essential to optimize recovery and reduce antimicrobial resistance; however, its implementation remains suboptimal.

### **Objective:**

To evaluate the association between the appropriateness of definitive antibiotic therapy and recovery from UTI in adult patients.

### **Methods:**

This study employed a retrospective cohort design using secondary data. Subjects were adult patients ( $\geq 18$  years) diagnosed with UTI based on clinical symptoms and urine culture results. Patients were categorized according to the appropriateness of definitive antibiotic therapy as appropriate or inappropriate. The cohort inception was defined as the time when UTI was diagnosed based on culture results. Recovery was evaluated up to day 14 and classified as recovered or not recovered. Statistical analysis was performed using Chi-square or Fisher's Exact test and Relative Risk (RR) calculation, with  $p < 0.05$  considered significant.

### **Results:**

A total of 116 adult UTI patients were analyzed. Clinical recovery was achieved in 74 patients (63.8%). Sixty-three patients (54.3%) received appropriate definitive therapy, while 53 (45.7%) received inappropriate therapy. Appropriate definitive therapy was associated with a higher recovery rate (RR 1.86; 95% CI 1.46–3.95;  $p < 0.001$ ), and adjustment of antibiotics within  $\leq 12$  hours from empirical to definitive therapy after culture results was also associated with increased recovery (RR 1.49; 95% CI 1.19–11.98). In multivariate analysis, appropriate definitive therapy remained independently associated with recovery (aRR 1.83; 95% CI 1.27–2.63;  $p = 0.001$ ), as did antibiotic adjustment within  $\leq 12$  hours (aRR 1.35; 95% CI 1.29–1.72;  $p = 0.016$ ).

### **Conclusion:**

Appropriate definitive antibiotic therapy provides a 1.83-fold higher likelihood of recovery compared to inappropriate therapy.

**Keywords:** Urinary tract infection, definitive antibiotic, therapy appropriateness, recovery, antimicrobial resistance