

## INTISARI

**Latar belakang:** Terapi antibiotik pada pasien CAP memiliki insidensi tinggi untuk menyebabkan resistensi antibiotik. **Tujuan:** Menganalisis kuantitas penggunaan antibiotik yang dinilai menggunakan ATC/DDD dan DU 90% berdasarkan kategori AWaRe serta hubungan rasionalitas penggunaan antibiotik empiris terhadap luaran klinis dan lama rawat inap pasien CAP di RS Akademik UGM. **Metode:** Penelitian observasional deskriptif dan analitik dengan desain *cohort* retrospektif, menggunakan teknik pengambilan sampel *consecutive sampling*. Subjek penelitian adalah pasien CAP rawat inap periode Januari 2021-Januari 2024. Rasionalitas dinilai dengan *Gyssens* dan penilaian luaran klinis berdasarkan keterangan klinisi serta memenuhi  $\geq 2$  parameter perbaikan klinis. Hubungan rasionalitas penggunaan antibiotik terhadap luaran klinis dan lama rawat inap menggunakan analisis bivariat uji *chi square test*, *fisher's exact*, dan uji *mann whitney*. Hubungan variabel perancu terhadap luaran klinis menggunakan uji *multiple logistic regression*, sedangkan perbedaan variabel perancu terhadap lama rawat inap menggunakan uji *mann whitney* dan uji *kruskal wallis*. **Hasil:** Evaluasi kuantitas penggunaan antibiotik dengan ATC/DDD dan DU 90% diperoleh levofloksasin 47,45 DDD/100 hari pasien (41,86%), seftriakson 35,58 DDD/100 hari pasien (31,40%), azitromisin 16,14 DDD/100 hari pasien (14,24%), serta termasuk kelompok *WATCH*. Hasil analisis menunjukkan tidak terdapat hubungan signifikan antara rasionalitas penggunaan antibiotik empiris terhadap luaran klinik ( $p=0,052$ ) dengan estimasi risiko terjadinya luaran klinis tidak membaik pada kelompok pasien tidak rasional sebesar 5,1 dibandingkan kelompok pasien rasional (RR 5,067 95%CI 0,979-26,222). Lama rawat inap pasien tidak rasional dan rasional adalah rata-rata 5,33 hari dan 4,86 hari. Hasil analisis menunjukkan tidak terdapat perbedaan signifikan antara rasionalitas penggunaan antibiotik empiris terhadap lama rawat inap ( $p=0,392$ ). **Kesimpulan:** Tidak terdapat hubungan signifikan antara rasionalitas penggunaan antibiotik empiris terhadap luaran klinik ( $p=0,052$ ) dan tidak terdapat perbedaan signifikan antara rasionalitas penggunaan antibiotik empiris terhadap lama rawat terkait antibiotik ( $p=0,392$ ).

**Kata Kunci:** *Community Acquired Pneumonia*, Antibiotik Empiris, Metode *Gyssens*, ATC/DDD, DU 90%

## ABSTRACT

**Background:** Antibiotic therapy in CAP patients has a high incidence of causing antibiotic resistance. **Objective:** To analyze the quantity of antibiotic use assessed using ATC/DDD and DU 90% based on AWaRe category as well as the relationship of rationality of empirical antibiotic use to clinical outcomes and length of hospitalization of CAP patients at UGM Academic Hospital. **Methods:** Descriptive and analytic observational research with retrospective cohort design, using consecutive sampling technique. The study subjects were CAP patients hospitalized in the period January 2021-January 2024. Rationality was assessed with Gyssens and clinical outcome assessment based on clinician information and meeting  $\geq 2$  clinical improvement parameters. The relationship of rationality of antibiotic use to clinical outcomes and length of hospitalization using bivariate analysis of the chi square test, fisher's exact test, and mann whitney test. The relationship of confounding variables to clinical outcomes used multiple logistic regression test, while differences in confounding variables to length of hospitalization used mann whitney test and kruskal wallis test. **Results:** Evaluation of the quantity of antibiotic use with ATC/DDD and DU 90% obtained levofloxacin 47.45 DDD/100 patient days (41.86%), ceftriaxone 35.58 DDD/100 patient days (31.40%), azithromycin 16.14 DDD/100 patient days (14.24%), and included the WATCH group. The results of the analysis showed no significant relationship between the rationality of empirical antibiotic use and clinical outcomes ( $p=0.052$ ) with an estimated risk of clinical outcomes not improving in the irrational patient group by 5.1 compared to the rational patient group (RR 5.067 95%CI 0.979-26.222). The length of hospitalization of irrational and rational patients was an average of 5.33 days and 4.86 days, respectively. The analysis showed no significant difference between the rationality of empirical antibiotic use and length of hospitalization ( $p=0.392$ ). **Conclusion:** There is no significant relationship between the rationality of empirical antibiotic use on clinical outcomes ( $p=0.052$ ) and there is no significant difference between the rationality of empirical antibiotic use on antibiotic-related length of stay ( $p=0.392$ ).

**Keywords:** Community Acquired Pneumonia, Empirical Antibiotics, Gyssens Method, ATC/DDD, DU 90%