

INTISARI

Latar Belakang dan Tujuan Penelitian : *Hospital Acquired Pneumonia* (HAP) dapat memperpanjang durasi rawat inap sehingga akan menyebabkan peningkatan beban ekonomi. Antibiotik meropenem dan levofloxacin merupakan antibiotik yang sesuai panduan sebagai terapi antibiotik empiris HAP. Penelitian ini bertujuan untuk menganalisis *cost effectiveness* meropenem dibandingkan levofloxacin.

Metode penelitian: Rancangan penelitian yang digunakan adalah kohort retrospektif, populasi pada penelitian ini adalah pasien dengan diagnosa HAP yang mendapat terapi meropenem atau levofloxacin, dengan jumlah sampel 50 untuk kelompok meropenem, 51 sampel untuk kelompok levofloxacin. Penelitian ini menggunakan perspektif *provider* sehingga dihitung biaya medis langsung. Efektivitas dinilai setelah 72 jam terapi, durasi rawat inap HAP, efek samping obat dan rata-rata biaya antar kelompok meropenem dan levofloxacin dibandingkan dengan mengukur nilai *Average cost effectiveness ratio* (ACER) dan *Incremental cost effectiveness ratio* (ICER). Perhitungan biaya berdasarkan data yang diperoleh dari bagian rekapitulasi keuangan rumah sakit, sedangkan data untuk efektivitas, durasi rawat inap HAP, dan efek samping obat diperoleh dari rekam medik pasien periode tahun 2021-2023.

Hasil Penelitian: Levofloxacin mempunyai efektifitas sebesar 86,3%, meropenem mempunyai efektifitas 74%. Efektivitas antara kedua kelompok tidak berbeda signifikan dengan nilai $p=0,122$ ($p>0,05$). Pada kedua kelompok mempunyai keamanan yang sama karena tidak ditemukan efek samping pada penggunaan meropenem dan levofloxacin. Tidak ada perbedaan signifikan terkait durasi rawat inap HAP dengan nilai $p=0,189$ ($p>0,05$). Biaya medis langsung penggunaan meropenem Rp. 31.515.563,- dan biaya medis langsung penggunaan levofloxacin sebesar Rp. 21.785.558,- Perhitungan nilai ICER Rp. -791.057,- menunjukkan levofloxacin lebih dominan dibanding meropenem.

Kesimpulan: Levofloxacin lebih efektif dibanding meropenem. Kedua antibiotik mempunyai keamanan yang sama terkait efek samping reaksi hipersensitivitas dan prolong QT. Levofloxacin *cost saving* dibanding meropenem yang dipengaruhi oleh variabel usia dan infeksi lain.

Kata kunci: *Hospital acquired pneumonia*, levofloxacin, meropenem.

ABSTRACT

Background and research objectives: Hospital Acquired Pneumonia (HAP) can extend duration of hospitalisation which will lead to an increase in economic burden. Meropenem and levofloxacin are antibiotics that meet the guidelines as empirical antibiotic therapy for HAP. This study aims to analyze the cost effectiveness of meropenem compared to levofloxacin.

Method: The research design used was a retrospective cohort, the population in this study were patients with a diagnosis of HAP who received meropenem or levofloxacin therapy, with a total sample of 50 for the meropenem group, 51 samples for the levofloxacin group. This study used a provider perspective so that direct medical costs were calculated. Effectiveness was assessed after 72 hours of therapy, duration of HAP hospitalisation, drug side effects and average costs between meropenem and levofloxacin groups were compared by measuring the Average cost effectiveness ratio (ACER) and Incremental cost effectiveness ratio (ICER) values. Cost calculations are based on data obtained from the hospital's financial recapitulation section, while data for effectiveness, duration of HAP hospitalisation, and drug side effects were obtained from patient medical records for the 2021-2023 period.

Results: Levofloxacin had an effectiveness of 86.3%, meropenem had an effectiveness of 74%. The effectiveness between the two groups was not significantly different with a value of $p=0.122$ ($p>0.05$). Both groups had the same safety because no side effects were found in the use of meropenem and levofloxacin. There was no significant difference in the duration of HAP hospitalisation with a p value of 0.189 ($p>0.05$). The direct medical cost of using meropenem was Rp. 31,515,563, - and the direct medical cost of using levofloxacin was Rp. 21,785,558, - The calculation of the ICER value of Rp. -791,057, - shows that levofloxacin is more dominant than meropenem.

Conclusion: Levofloxacin is more effective than meropenem. Both antibiotics have similar safety regarding side effects of hypersensitivity reactions and QT prolongation. Levofloxacin cost saving compared to meropenem which is influenced by variables of age and other infections.

Keywords: Hospital acquired pneumonia, levofloxacin, meropenem.