

ABSTRAK

**PERBANDINGAN WAKTU YANG DI BUTUHKAN ANTARA PAPANAN
CEFTRIAXON DAN AMIKASIN TERHADAP TIMBULNYA
Escherichia coli ESBL**

Tujuan: Penelitian ini bertujuan membandingkan waktu yang dibutuhkan antara paparan ceftriaxone dan amikasin terhadap timbulnya *E.coli* ESBL

Metode: Penelitian ini merupakan penelitian eksperimental yaitu dengan memberikan paparan ceftriaxone dan amikasin selama 14 hari kepada 16 isolat, kemudian dilakukan skrining dengan cefotaxim, dan jika resisten terhadap cefotaxim, dilakukan uji konfirmasi ESBL dengan Uji *Double Disc Sensitivitas Test*. Isolat merupakan strain *E. coli* non-ESBL yang berasal dari isolat klinik dari pasien di Unit Klinik Mikrobiologi RSUD Dr. Soetomo Surabaya.

Hasil: Terdapat 11 isolat *E. coli* non-ESBL setelah terpapar ceftriaxone yang menjadi resisten terhadap cefotaxim, namun setelah dilakukan uji konfirmasi hanya ada 10 isolat yang terbukti ESBL, sedangkan yang dipapar amikasin terdapat 5 isolat *E. coli* non-ESBL yang menjadi resisten terhadap cefotaxim, namun setelah dilakukan uji konfirmasi hanya ada 4 isolat yang terbukti ESBL. Untuk hasil konfirmasi ESBL, sejak hari ke-1 isolat sudah menjadi ESBL setelah dipapar ceftriaxone yaitu 2 (12,5%) isolat, hari ke-4 3 (18,75%) isolat, dan hari ke-14 menjadi 9 (56,25%) Isolat ESBL, sedangkan setelah dipapar amikasin hari-4 (12,5%) isolate ESBL, hari ke-8 3 (18,75%), dan hari ke-12 sampai hari ke-14 4 (25%) isolate ESBL.

Kesimpulan: Terdapat 2 (12,5%) isolat ESBL pada hari ke-1, pada hari ke-4 sebanyak 3 (18,75%) isolat ESBL, dan hingga hari ke-14 9 (56,25%) isolat menjadi ESBL dari 16 isolat yang terpapar ceftriaxone. Sedang isolate yang terpapar amikasin hari-4 (12,5%) isolate ESBL, hari ke-8 3 (18,75%), dan hari ke-12 sampai hari ke-14 4 (25%) isolate ESBL.

Kata kunci: Ceftriaxon, amikasin, *Escherichia coli*, ESBL

ABSTRAC
COMPARISON BETWEEN EXPOSURE OF
CEFTRIAXON AND AMIKACIN TO DEVELOP ESBL
PRODUCING *Escherichia coli*

Objective: This study aims to compare the time taken between exposure to ceftriaxone and amikacin to the onset of ESBL *E. coli*.

Method: This research is an experimental study, namely by giving exposure to ceftriaxone and amikacin for 14 days to 16 isolates, then screening with cefotaxim, and if resistant to cefotaxim, ESBL confirmation test is carried out with the Double Disc Sensitivity Test. Isolate is a non-ESBL *E. coli* strain derived from clinical isolates from patients in the Microbiology Clinical Unit of Dr. Soetomo Surabaya.

Results: There were 11 non-ESBL *E. coli* isolates after exposure to ceftriaxone which became resistant to cefotaxim, but after a confirmation test there were only 10 isolates that were proven to be ESBL, while those exposed to amikacin contained 5 non-ESBL *E. coli* isolates that became resistant to cefotaxim. however, after the confirmation test, there were only 4 isolates that were proven to be ESBL. For the ESBL confirmation results, since the 1st day the isolates had become ESBL after being exposed to ceftriaxone, namely 2 (12.5%) isolates, the 4th day 3 (18.75%) isolates, and the 14th day to 9 (56, 25%) ESBL isolates, while after exposure to amikacin on day 4 (12.5%) the ESBL isolate, day 8 3 (18.75%), and day 12 to day 14 4 (25%) isolates ESBL

Conclusion: There were 2 (12.5%) ESBL isolates on the 1st day, 3 (18.75%) ESBL isolates on the 4th day, and up to the 14th day 9 (56.25%) isolates became ESBL from 16 isolates exposed to ceftriaxone. Isolates exposed to amikacin on day 4 (12.5%) ESBL isolates, day 8 3 (18.75%), and day 12 to day 14 4 (25%) ESBL isolates.

Keywords: Ceftriaxon, amikacin, *Escherichia coli*, ESBL