

ABSTRACT

Prevalence of *Klebsiella pneumoniae* and *Escherichia coli* that are Resistant to Carbapenem at Dr. Soetomo General Hospital, Surabaya

Background: Antibiotic resistance is the most urgent global problem, especially resistance to carbapenem in *Klebsiella pneumonia* and *Escherichia coli*. Infection caused by antibiotic-resistant bacteria is very difficult to treat, so the spread of carbapenem resistance continues to expand and causes high morbidity and mortality.

Purpose: To determine the prevalence of *Klebsiella pneumonia* and *Escherichia coli* that are resistant to carbapenem at Dr. Soetomo General Hospital, Surabaya.

Method: This research is a descriptive type using secondary data taken from the logbook in Clinical Microbiology Installation at Dr. Soetomo General Hospital.

Results: From 1026 isolates, there are 300 *Klebsiella pneumonia* isolates (71%) and 726 *Escherichia coli* isolates (29%). The highest prevalence of *Klebsiella pneumonia* which is resistant to carbapenem is (12%) 37/300 isolates in ertapenem and *Escherichia coli* of (4%) 33/726 isolates to ertapenem. Based on age groups, the highest prevalence of carbapenem-resistant *Klebsiella pneumonia* of (16%) 3/19 against imipenem and ertapenem in adolescents. *Escherichia coli* is (7%) 4/61 against meropenem in children. Based on the health service, *Klebsiella pneumonia* (75%) 6/8 isolates on meropenem in the obgyn unit and on *Escherichia coli* with (14%) 2/14 in ICU on meropenem and ertapenem.

Conclusion: The prevalence of *Klebsiella pneumonia* which is resistant to carbapenem is higher compared to *Escherichia coli*. The prevalence of resistance to ertapenem is higher than other types of carbapenem. Based on age groups, the prevalence of carbapenem resistance in *Klebsiella pneumonia* is higher in adolescence and *Escherichia coli* was higher in children. Based on health service, the highest prevalence of carbapenem resistance in *Klebsiella pneumonia* is in the obgyn unit and *Escherichia coli* in the ICU.

Keywords: Antibiotic resistance, *Carbapenem*, *Escherichia coli*, *Klebsiella pneumoniae*, Prevalence