

**COMPARISON OF THE ANTIMICROBIAL SUSCEPTIBILITY  
PATTERN OF *Klebsiella pneumoniae* ISOLATED FROM  
URINE OF PATIENT HOSPITALIZED AT DR.SAIFUL ANWAR  
GENERAL HOSPITAL IN YEAR 2009/2010 AND 2010/2011**

**FINAL ASSIGNMENT**

To fulfill the requirements for the degree of Bachelor of Medicine



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CERTIFICATION PAGE

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**ABSTRACT**

Raman,Vinoth Kumar. 2012. **Comparison of the Antimicrobial Susceptibility Pattern of *Klebsiella pneumoniae* Isolated From Urine Of Patient Hospitalized at Saiful Anwar General Hospital, Malang in Year 2009/2010 and 2010/2011.** Final Assignment. Medical Program, Medical Faculty of Brawijaya University. Supervisor (1) Dr. Sri Winarsih Msi,Apt (2) dr.Harun Al Rasyid,MPH.

*Klebsiella pneumoniae* is a common bacteria for urinary tract infection (UTI) with a change of susceptibility towards antimicrobials. The aim of this study was to determine the change in antimicrobial susceptibility pattern of *Klebsiella pneumoniae* at Saiful Anwar General Hospital, Malang in year 2009/2010 and 2010/2011. This study was conducted using retrospective analytic method. The data of antimicrobial susceptibility obtained from the Microbiology Installation of Saiful Anwar General Hospital, Malang and was analyzed using Chi Square test. During the study period, 2402 and 2460 urine samples were analyzed and 1026 (42.7%) and 1069 (43.5%) were positive culture in the year of 2009/2010 and 2010/2011 respectively. From this samples, 72(7.0%) samples in year 2009/2010 and 96(9.0%) samples in year 2010/2011 were positively infected by *Klebsiella pneumoniae*. Antimicrobials used in this study were amoxicillin-clavulanic acid, cefotaxime, ceftriaxone, cefuroxime, cephalotin, kanamycin, gentamicin, netilmicin, amikacin, ciprofloxacin, ofloxacin, norfloxacin, meropenem, tetracycline, doxycycline, chloramphenicol, cotrimaxole, sulfonamide, nalidixic acid and nitrofurantoin.As a result, a significant increase in resistancy was observed in amoxicillin-clavulanic acid,kanamycin,ciprofloxacin and nalidixic acid ( $p<0.05$ ). In conclusion, the antimicrobial susceptibility pattern of *Klebsiella pneumoniae* showed an alteration in the year 2009/2010 and 2010/2011.

Keywords: *Klebsiella pneumoniae*,antimicrobial susceptibility pattern



## ABSTRAK

Raman,Vinoth Kumar. 2012. **Perbandingan Pola Kepekaan *Klebsiella pneumoniae* Yang diambil dari urin pasien yang menginap di Rumah Sakit Saiful Anwar, Malang pada tahun 2009/2010 dan 2010/2011.** Tugas Akhir, Program Studi Pendidikan Kedokteran, Fakultas Kedokteran Universitas Brawijaya. Pembimbing : (1) Dr. Sri Winarsih Msi,Apt (2) dr.Harun Al Rasyid,MPH

*Klebsiella pneumoniae* merupakan bakteri yang sering menyebabkan infeksi saluran kemih dengan perubahan pola kerentanan terhadap antimikroba. Tujuan penelitian ini adalah untuk mengetahui perubahan pola kepekaan antimikroba pada *Klebsiella pneumoniae* di Rumah Sakit Saiful Anwar, Malang pada tahun 2009/2010 dan 2010/2011. Studi ini dilakukan dengan metode retrospektif analitik. Data antimikroba didapatkan dari Instalasi Mikrobiologi Rumah Sakit Saiful Anwar, Malang dan dianalisis dengan uji *Chi Square*. Dalam penelitian ini, 2402 dan 2460 sample urin telah dianalisis dan didapatkan 1026 (42.7%) dan 1069 (43.5%) kultur positif pada tahun 2009/2010 dan 2010/2011. Dari sampel ini, 72(7.0%) sampel pada tahun 2009/2010 dan 96(9.0%) sampel dari tahun 2010/2011 positif terinfeksi bacteria *Klebsiella pneumoniae*. Antimikroba yang diteliti dalam penelitian ini adalah amoxicillin-clavulanic acid, cefotaxime, ceftriaxone, cefuroxime, cephalotin, kanamycin, gentamicin, netilmicin, amikacin, ciprofloxacin, ofloxacin, norfloxacin, meropenem, tetracycline, doxycycline, chloramphenicol, cotrimaxole, Sulfonamide, nalidixic acid and nitrofurantoin. Hasil penelitian adanya menunjukkan peningkatan resistensi yang bermakna pada amoxicillin-clavulanic acid, kanamycin, ciprofloxacin and nalidixic acid ( $p < 0.05$ ). Dapat disimpulkan bahwa pola kepekaan *Klebsiella pneumoniae* terhadap antimikroba menunjukkan perubahan pada tahun 2009/2010 dan tahun 2010/2011.

Kata Kunci: *Klebsiella pneumoniae*, pola kepekaan antimikroba

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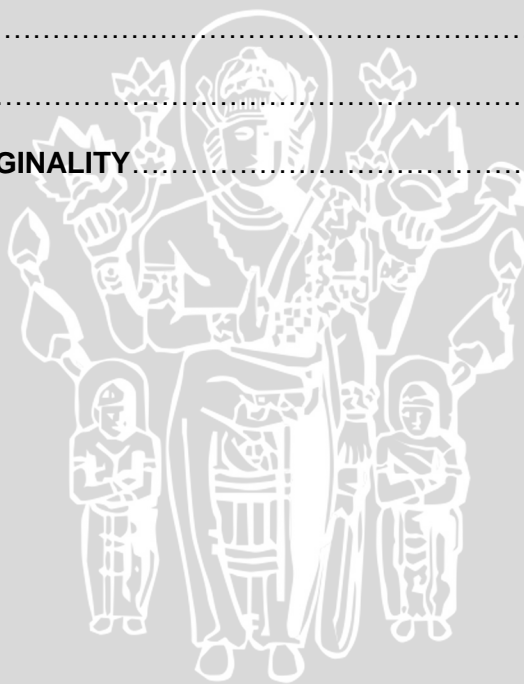
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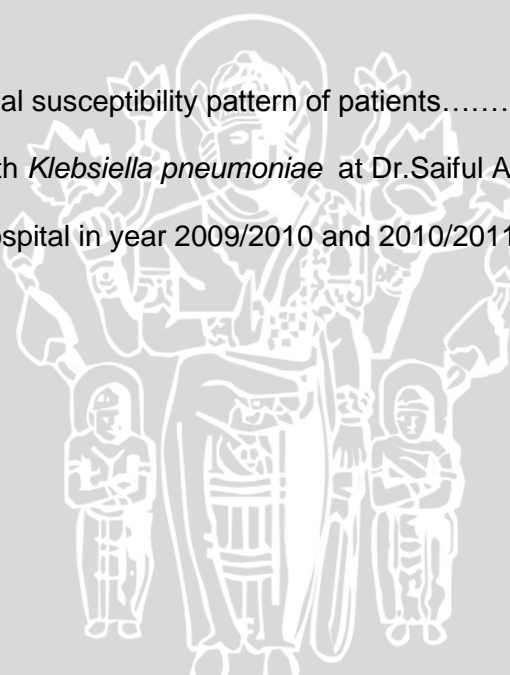
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