

**Prevalensi Gen OXA-23 Pada Isolat Klinis Bakteri *Acinetobacter baumannii*
di RSUP Dr. M. Djamil Padang**



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ABSTRACT

PREVALENCE OF GEN OXA-23 IN CLINICAL ISOLATES OF ACINETOBACTER BAUMANNII AT RSUP DR. M. DJAMIL PADANG

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Acinetobacter baumannii is such a big challenge in this modern era because of their multi-drug resistance (MDR) through their resistance mechanism, namely the production of beta lactamase enzymes, one of them is oxacillinases. Several studies have revealed that the OXA-23 gene has an important role in the production of the beta lactamase enzyme so that these bacteria are resistant to antibiotics, especially carbapenem. This study was conducted to determine the description of the resistance of the *Acinetobacter baumannii* by looking at the prevalence of the OXA-23 gene in clinical isolates of these bacteria at RSUP Dr. M. Djamil Padang.

This study was a descriptive observational study and used a cross-sectional design using polymerase chain reactions (PCR) and electrophoresis techniques. The samples were clinical isolates of *Acinetobacter baumannii* bacteria stored in the Microbiology Laboratory of the Faculty of Medicine, Andalas University with inclusion and exclusion criteria.

Of the 150 clinical isolates of *Acinetobacter baumannii* studied, most of the bacteria were still sensitive to the antibiotics of Amikacin (84%), Tigecycline (78.76%), and Trimethoprim / Sulfamethoxazole (76.77%). Meanwhile, all of the *Acinetobacter baumannii* isolates were resistant to cefazolin. In PCR and electrophoresis tests, 50 clinical isolates were positive for the OXA-23 gene. 46 of them were carbapenem resistant, while the other 4 isolates were sensitive to carbapenem. From these results it can be concluded that the prevalence of the OXA-23 gene in *Acinetobacter baumannii* isolates in RSUP Dr. M. Djamil Padang was 85.18% for carbapenem resistant isolates and 4.30% for carbapenem sensitive isolates.

Keywords : *Acinetobacter baumannii*, carbapenem, OXA-23 gene

ABSTRAK
PREVALENSI GEN OXA-23 PADA ISOLAT KLINIS BAKTERI
***ACINETOBACTER BAUMANNII* DI RSUP DR. M. DJAMIL PADANG**

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Bakteri *Acinetobacter baumannii* merupakan tantangan besar dalam masalah di era modern seperti sekarang karena sifatnya yang *multi-drug resistant* (MDR) melalui adanya mekanisme resistensi pada bakteri tersebut yaitu produksi enzim *beta lactamase*, salah satunya adalah *oxacillinases*. Beberapa penelitian sebelumnya telah mengungkapkan bahwa gen OXA-23 berperan penting dalam produksi enzim *beta lactamase* sehingga bakteri ini resisten terhadap antibiotik khususnya golongan karbapenem. Penelitian ini dilakukan untuk mengetahui gambaran resistensi bakteri *Acinetobacter baumannii* yaitu dengan melihat prevalensi gen OXA-23 pada isolat klinis bakteri tersebut di RSUP Dr. M. Djamil Padang.

Penelitian ini merupakan penelitian deskriptif observasional dan menggunakan rancangan *cross-sectional* dengan menggunakan teknik *polymerase chain reactions* (PCR) dan elektroforesis. Sampel yang diteliti berupa isolat klinis bakteri *Acinetobacter baumannii* yang disimpan di Laboratorium Mikrobiologi Fakultas Kedokteran Universitas Andalas dengan kriteria inklusi dan eksklusi.

Dari 150 isolat klinis *Acinetobacter baumannii* yang diteliti, sebagian besar bakteri masih sensitif terhadap antibiotik golongan *Amikacin* (84%), *Tigecycline* (78,76%), dan *Trimethoprim/Sulfamethoxazole* (76,77%). Sedangkan seluruh isolat bakteri *Acinetobacter baumannii* resisten terhadap cefazolin. Pada uji PCR dan elektroforesis didapatkan 50 isolat klinis positif gen OXA-23. Isolat klinis yang ditemukan positif gen OXA-23 tersebut 46 diantaranya merupakan resisten karbapenem, sedangkan 4 isolat lainnya merupakan sensitif karbapenem. Dari hasil penelitian tersebut dapat disimpulkan bahwa prevalensi gen OXA-23 pada bakteri *Acinetobacter baumannii* di RSUP Dr. M. Djamil Padang adalah 85,18% pada isolat resisten karbapenem dan 4,30% pada isolat sensitif karbapenem.

Kata kunci : *Acinetobacter baumannii*, karbapenem, gen OXA-23