

عنوان مقاله:

Flow cytometry as a tool for study of antibiotic resistance pattern in Multi drug resistant *Acinetobacter baumannii* isolates

محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: 1398)

تعداد صفحات اصل مقاله: 1

نویسنده:

Nahid Rahimi

خلاصه مقاله:

Introduction and Objectives: *Acinetobacter baumannii* is one of the most cause of nosocomial infections and MDR bacteria in worldwide. The rapid identification of MDR isolates is particular important. Flow cytometry is a rapid method that can analysis thousands of cells per second and can be used for identification, determination of cell viability in microbial populations and determination of bacterial antimicrobial susceptibility. The aim of this study was to investigate antibiotic resistance patterns of *Acinetobacter baumannii* isolates by flow cytometry. **Materials and Methods:** 55 isolates of *Acinetobacter baumannii* were isolated from clinical specimen of patients and were identified by biochemical tests. Antibiotic resistance patterns were studied by disc diffusion method for 7 antibiotics based on CLSI 2017 and MDR strains were selected. MIC of Meropenem and Piperacillin were determined by microdilution broth method. Also antibiotic resistance pattern of isolates was determined by coloring with Rhodamine-123 and flow cytometry. **Results:** The highest and lowest resistance were for piperacillin (100%) and tetracycline (65.7%), respectively. 98% of isolates were MDR. The MIC ranges for meropenem were 8 - 256 $\mu\text{g} / \text{ml}$ and for piperacillin were 128-1024 $\mu\text{g} / \text{ml}$. By flow cytometry demonstrated that at concentrations of 8, 4 and 2 $\mu\text{g} / \text{ml}$ of meropenem, only 1.96%, 1.44% and 0.59%, of cells were killed. At concentrations of 64, 128 and 16 $\mu\text{g} / \text{ml}$ of piperacillin, 13.8%, 11.3% and 5.9% of cells were killed. Reducing the number of living bacteria was observed with increasing concentrations of both antibiotics. Up to 95% of isolates were resistant to both antibiotics by flow cytometry. **Conclusion:** The similarity between the results of flow cytometry and both agar and broth antibacterial susceptibility methods showed that flow cytometry as reliable and rapid test can be used for this purpose.

کلمات کلیدی:

Antibiotic susceptibility, *Acinetobacter baumannii*, MDR, flow cytometer

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/987199>

