

14th International Conference on **Microbial Interactions & Microbial Ecology**
&
11th Edition of International Conference on **Advances in Microbiology and Public Health**
August 19-20, 2019 Vienna, Austria

Trends in antibiotics resistance of *Staphylococcus aureus* at a teaching hospital, China, 2011-2016

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Objective: The purpose of this study was to describe the antibiotics resistance trends of *Staphylococcus aureus* (*S. aureus*) gathered from a general hospital in Zhengzhou city, Henan province, China during 2011-2016.

Methods: The resistance of 1406 *S. aureus* strains detected by Zhuhai Deere DL-96 Bacteria Identification System from 19,260 specimens were analyzed by Minimum inhibitory concentration (MICs). Statistical analyses were performed using the chi-squared test and the chi-squared test for trend.

Results: During the study period (2011-2016), the overall detection rate of *S. aureus* was 7.3% (1406/19,260), of which rates of infected *S. aureus* increased from 6.72% in 2011 to 8.62% in 2016 ($p=0.0421$), and resistance rates of mostly (14/18) detected antibiotics to *S. aureus* showed a significant downward trend (all- $p<0.05$). Among these antibiotics resistance to cefoxitin decreased from 69.79% in 2011 to 41.9% in 2016. The isolated methicillin-resistant *S. aureus* (MRSA) overall detection rate was 43.1% (606/1406), which showed a downward trend of resistance rates to 13 antibiotics (all- $p<0.05$), of which levofloxacin fastest decreased from 76.47% in 2011 to 50.89% in 2016. No isolate was detected to be resistant to linezolid and vancomycin.

Conclusion: The epidemiological characteristics of *S. aureus*, particularly MRSA, are changing rapidly. Although the resistance rates were decreasing, the infection caused by *S. aureus* still remains a widely spread condition. Continuous surveillance and abiding to the rules of using antibiotics are necessary.

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