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Challenges in identification in *Acinetobacter baumannii*: A comparative analysis of three methods of identification

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Research question: Comparative Evaluation of phenotypic, automated VITEK-2 compact system & genotypic methods for identification of *Acinetobacter baumannii*: An analysis of 78 isolates

Background: *Acinetobacter baumannii* has emerged as a multidrug resistant pathogen with high mortality as compared to non *baumannii* species especially in hospital settings. However, identification of *Acinetobacter* upto the species level is complicated. Molecular detection of *bla* OXA-51 (intrinsic to *A. baumannii*) has been found as a simple and rapid method for identification

Purpose: In this study we intend to compare the performance of conventional phenotypic & automated VITEK 2 compact system with that of molecular detection of *bla* OXA 51 to identify *A. baumannii*.

Methods: A total of non-repetitive 78 bacterial isolates presumptively identified as *Acinetobacter* spp. from routine clinical samples were further subjected up to species level as per modified Bouvet and Grimont phenotypic system, VITEK 2 compact system & OXA 51 detection by PCR.

Results: Out of 78 isolates, 75 were phenotypically identified as *Acinetobacter baumannii* by Bouvet and Grimont phenotypic system (75/78), 74 were confirmed *A. baumannii* by VITEK 2 compact system (74/78) & 73 were confirmed for the presence of OXA51 by PCR (73/78). Sensitivity, specificity, NPV & PPV for VITEK 2 compact system was calculated as 100%, 80%, 100% & 98.65% respectively. Phenotypic identification by modified Bouvet and Grimont phenotypic system was found having similar sensitivity of 100% but less specificity (60%) & NPV and PPV were 100% & 97.33% respectively.

Conclusion: Our findings showed that we can simply and quickly detect *A. baumannii* isolates by PCR using *bla*OXA genes which could be useful with better clinical outcome, antimicrobial stewardship and in outbreak situation.

Keywords: *A. baumannii*, *bla*OXA-51, VITEK 2 compact system

Biography:

Dr. Amresh Pati completed my MBBS from S.C.B Medical college, Cuttack, Odisha, India in 2011, After doing 6 yrs of peripheral service, currently pursuing Post Graduate degree in Microbiology in AIIMS Bhubaneswar