EVALUATION OF A NEW CHROMOGENIC MEDIUM FOR SCREENING OF *BURKHOLDERIA CEPACIA* COMPLEX FROM RESPIRATORY SPECIMENS

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Background & Objectives

- *Burkholderia cepacia* complex (Bcc) includes opportunistic human pathogens
- Bcc has a high virulence potential including ability to multiply in the presence of disinfectants, indwelling medical devices as well as antibiotic solutions, thus acting as a potential threat in the hospital settings
- In most instances, Bcc has been misidentified as non-fermenting Gram-negative bacilli (NFGNB) especially *Pseudomonas* spp
- The purpose of this study was to validate the use of CHROMagar™ *B. cepacia* medium to screen for Bcc in respiratory specimens from patients visiting our hospitals

Methods

A hospital based observational study was carried out in the Department of Microbiology in two different cities.

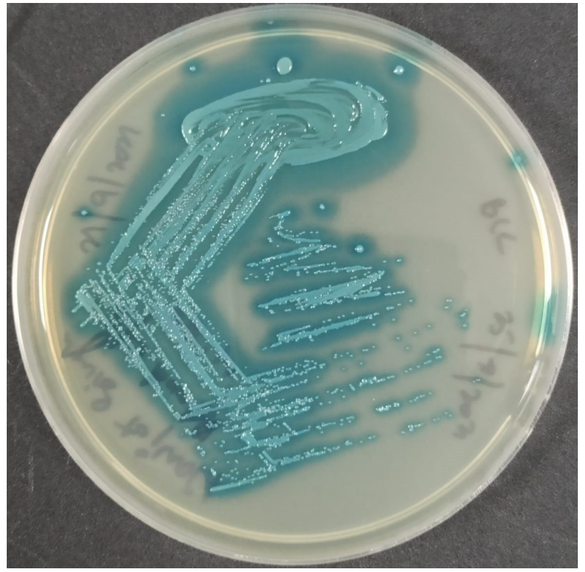
Sample size

- A total of 102 respiratory specimens (including specimens from cystic fibrosis patients) were tested
- Thirty pure Bcc isolates and 60 non-fermenting Gram negative bacilli (NFGNB) other than Bcc were also plated on the media

Specimen processing

- Specimens and pure laboratory confirmed (MALDI-TOF) isolates were plated on MacConkey agar as well as CHROMagar™ *B. cepacia* medium as per standard guidelines and incubated for 48 hours at 36 ± 1 °C under aerobic conditions
- Bcc isolates were identified using Gram's staining & MALDI-TOF
- Antimicrobial susceptibility was done by Kirby-Bauer disc diffusion method and VITEK 2 AST card
- *Burkholderia cepacia* ATCC 25416 was used for quality control
- Results were statistically analysed, sensitivity, specificity, positive predictive, negative predictive values and p value were calculated

Growth of Bcc on CHROMagar™ B.cepacia medium



Results

- Thirty pure isolates of Bcc were inoculated on CHROMagar™ *B.cepacia*, all formed bluish green colonies with a blue halo, while 78% (47/60) of NFGNB other than Bcc were inhibited on the medium
- Out of the 102 respiratory specimens tested, 17 specimens grew Bcc on CHROMagar™ *B.cepacia*, while only 9 specimens grew Bcc on McConkey agar (positive predictive value= 100%, p=0.013). In addition, 4 *Pseudomonas* spp. grew on CHROMagar™ *B.cepacia*, however the colony morphology was distinct from that of Bcc
- Overall sensitivity, specificity, positive predictive value, negative predictive of CHROMagar™ *B.cepacia* were found to be 100%, 78%, 100% & 96% respectively

Conclusions

The study concludes that CHROMagar *B. cepacia* medium is a highly sensitive and specific medium for isolation of Bcc from respiratory specimens.

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