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USE OF A NEW CHROMOGENIC CULTURE MEDIUM FACILITATES DETECTION OF *S. AUREUS* IN A SCREENING PROGRAM

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Introduction

Staphylococcus aureus remains one of the most frequently identified bacterial pathogens in clinical laboratories. In many medical centers, methicillin-resistant strains (MRSA) represent a major nosocomial problem. Screening for MRSA primarily requires rapid and reliable detection of *S.aureus*. CHROMagar™ Staph. aureus (CSA) is a new chromogenic medium for presumptive identification of *S. aureus* on the basis of pink (mauve) colony pigmentation.

Objective

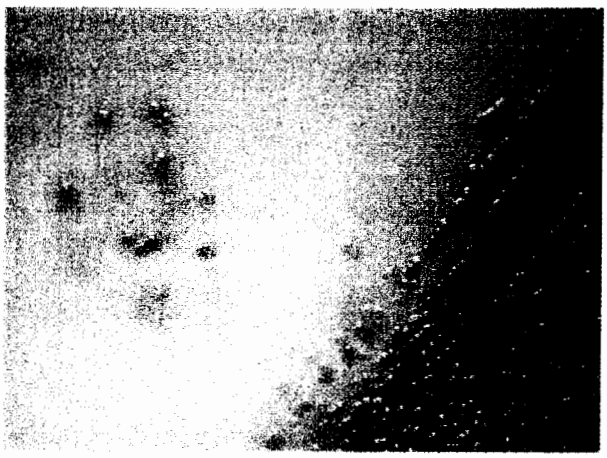
To evaluate the CSA medium for isolation and identification of *S. aureus* from various clinical specimens in comparison with a standard culture method applied in a screening program for *S. aureus*/MRSA carriers.

Methods

During a 6-week period consecutive swabs and urine specimens were inoculated into a selective enrichment broth (Chapman broth containing 7.5% NaCl) and incubated on a shaker at 35°C for 18-24 h. The subculture was streaked on both a Columbia sheep blood agar plate and a CHROMagar™ Staph. aureus plate (Chromagar, Paris, France / Labo-Life, Pully, Switzerland, CSA) incubated at 35°C in the dark and examined after 24 h. CSA plates and conventional blood agar plates were read independently by different technicians. Mauve colonies on CSA plates and any colony types resembling staphylococci on blood agar plates were further tested for catalase and agglutination with Pastorex Staph Plus (Bio-Rad). Discrepant results were resolved by detection of coagulase, aurease (Rapidec Staph, bioMérieux) and/or PCR for *femA* gene. Oxacillin resistance was determined by standard methods (NCCLS).

Results

S. aureus including MRSA strains were detected in 121 (39%) of 309 specimens examined. On the conventional blood agar, 109 strains (sensitivity, 90.1%), on CSA, 114 strains (sensitivity, 94.2%) were isolated. Among the mauve colonies on CSA medium, only 7.4% were not confirmed as *S. aureus* (specificity, 92.6%).



Mauve (pink) colony color of *S. aureus* on CSA

Conclusion

A screening procedure using CHROMagar™ Staph. aureus medium allows at least equally sensitive detection of *S. aureus* than a conventional culture method, but requires less hands-on time and less reagents.

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Staphylococcus aureus remains one of the most frequently identified bacterial pathogens in clinical laboratories. In many medical centers, methicillin-resistant strains (MRSA) represent a major nosocomial problem. Screening for MRSA primarily requires rapid and reliable detection of *S.aureus*. CHROMagar Staph. aureus (CSA) is a new chromogenic medium for presumptive identification of *S. aureus* on the basis of pink (mauve) colony pigmentation.

Objective. To evaluate the CSA medium for isolation and identification of *S. aureus* from various clinical specimens in comparison with a standard culture method.

Methods. During a 6-week period consecutive swabs and urine specimens were inoculated into a selective enrichment broth (Chapman broth containing 7.5% NaCl) and incubated on a shaker at 35° C for 18-24 h. The subculture was streaked on both a Columbia sheep blood agar plate and a CSA plate, incubated at 35° C in the dark and examined after 24 h. CSA plates and conventional blood agar plates were read independently by different technicians. Mauve Colonies on CSA plates and any colony types resembling staphylococci on blood agar plates were further tested for catalase and agglutination with Pastorex Staph Plus. Discrepant results were resolved by detection of coagulase, aurease (Rapidec Staph) and/or *femA* gene. Oxacillin resistance was determined by standard methods.

Results. *S. aureus* including MRSA strains were detected in 121 (39%) of 309 specimens examined. On the conventional blood agar, 109 strains (sensitivity, 90.1%), on CSA, 114 strains (sensitivity, 94.2%) were isolated. Among the mauve colonies on CSA medium, only 7.4% were not confirmed as *S. aureus* (specificity, 92.6%).

Conclusion. A screening procedure using CSA medium allows at least equally sensitive detection of *S. aureus* than a conventional culture method, but requires less hands on time and less reagents.