

TITLE: Evaluation of chocolate agar for interpretation of sensitivity profile of *Neisseria gonorrhoeae*

AUTHORS: SANTOS, K.T.B.¹; MENDES, N.T.¹; ALMEIDA, R.F.M.¹; BASÍLIO, V.C.C.P.¹; BONELLI, R.R.²; FERREIRA, A.L.P.^{1,2};

INSTITUTIONS: 1. DIAGNÓSTICOS DA AMÉRICA, DUQUE DE CAXIAS, (RUA XAVIER PINHEIRO, 439, CEP25085-007, DUQUE DE CAXIAS - RJ, BRAZIL). 2. UNIVERSIDADE FEDERAL DO RIO DE JANEIRO, CIDADE UNIVERSITÁRIA, (AVENIDA CARLOS CHAGAS FILHO, 373, CEP 21941-590, CENTRO DE CIÊNCIAS DA SAÚDE, RIO DE JANEIRO-RJ, BRAZIL).

ABSTRACT:

Neisseria gonorrhoeae is a Gram-negative, fastidious microorganism, pathogen of gonorrhea, an infection sexually transmitted (IST) of public health concern worldwide. The high cost and difficulty of manufacturing the growth medium used for Antimicrobial Susceptibility Test (AST) are a challenge to clinical laboratory routine. An alternative growth medium is important for the implementation of fast and appropriate antibiotic therapy. This study aimed to analyze the Chocolate agar medium as an alternative to base GC agar medium in determination of minimum inhibitory concentration (MIC) for azithromycin and ceftriaxone, antibiotics used in the treatment of gonorrhea. Fifty clinical samples were used to compare Chocolate agar medium and base GC agar medium in the determination of the MIC of azithromycin and ceftriaxone in *N. gonorrhoeae* and evaluate if Chocolate agar is an alternative growth medium to be used in laboratory routine assays. The AST were performed using antimicrobial gradient method and the results were analysed based on the BrCast-EUCAST guideline. For azithromycin the analysis was based on the epidemiological cut-off (ECOFF) and showed that 58 % (n=29) of the samples presented the same MIC, while in 42% (n=21) the MIC has changed, however, the category remained the same in all samples analyzed. No change in ceftriaxone MICs were detected in this study between the growth media. The statistical analysis showed 100% of sensitivity and specificity. The results argued that Chocolate agar is a good growth medium alternative to be used in AST in laboratory routine assays because the same sensitivity profiles were obtained with both media. The implementation of Chocolate agar is important to clinical laboratory routine due to the positive impact in the cost of the exam without losing quality and accuracy.

Keywords: *Neisseria gonorrhoeae*, chocolate agar, antimicrobial susceptibility test.