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BATTERIOLOGIA

RAPID DETECTION OF GROUP B STREPTOCOCCI IN PREGNANT WOMEN DIRECTLY FROM ESWAB BY SIMPLEXA ASSAY: A PILOT STUDY

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INTRODUZIONE

Group B streptococcus (GBS) bacteria lives in the gut and can migrates to rectum, vagina and urinary tract. GBS is commonly found in healthy adult women and it was estimated that approximately 10–30% of pregnant women are asymptomatically colonized. GBS rarely causes disease in healthy individuals but can cause serious illness especially in newborns. Of particular concern is neonatal infection caused by vertical transmission during labor that can cause serious complications including meningitis. Around 7% of GBS+ pregnancies end in miscarriageand 2.22% of the babies diesin the first month of life.Diagnosis and prevention of early-onset disease (EOD) in newbornsconsists in culture-based screening of pregnant women at 35–37 weeks' gestation to identifythose who should receive intrapartum antibiotic prophylaxis (IAP). Molecular methods as an alternative in GBS diagnosisare diffusing for the fast time to result and sensitivity. In this study we investigated the performance of Simplexa™ GBS Direct assay, validated on enriched samples, directly on vaginal/rectal swabs.

METODI

Seventyfour (74) consecutive vaginal/rectal swabs (ESwabs-Copan) collected from antepartum women were plated on CNA agar (bioMérieux), enriched in LIM broth (Thermo Fisher) overnight and plated on chromogenic media (bioMérieux) for 24-48h. All swabs were also tested by Simplexa GBS Direct assay on the dedicated LIAISON MDX instrument (DiaSorin Molecular). The discordant samples were analyzed by MALDI-TOF on CNA colonies and Simplexa from the enriched Lim broths as per intended use. Unresolved samples were analyzed by Xpert GBS kit (Cepheid).

RISULTATI

Thirteen (13) out of 74 swabs were positive for the Simplexa GBS Direct kit (17.6%). One swab was negative in culture but confirmed positive by Xpert (Ct 35) and Simplexa on enriched broth (Ct 35.9). Among 61 swabs negative by the Simplexa, 5 were positive by culture. Three were confirmed negative by MALDI-TOF and Simplexa on enriched broth, while two were positive by both MALDI-TOF and Simplexa on enriched broth (Ct 18.6 and 21.1).The final Positive and Negative Predictive-Values for the Simplexa GBS Direct on swabs were 100% and 96.72%, respectively.

CONCLUSIONI

This pilot study showed promising performances of the Simplexa assay used directly on swabs in antepartum women. Although it can't be considered a point of care, this rapid and sensitive approach could represent an advantage for reducing the excessive use of antibiotics and the risks for newborns. Moreover, the ease of use of this assay could represent a valuable alternative for 24/7 laboratoriesand especially in case of urgency.