Comparison of two identification and susceptibility test kits forUreaplasmaspp andMycoplasma hominisin amniotic fluid of patients at high risk for intra-amniotic infection

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Abstract

Objective:Ureaplasma urealyticumandMycoplasma hominisare the most common microorganisms found in the amniotic fluid of patients at risk for preterm delivery. However, culture techniques for genital mycoplasms require special conditions, are barely considered as part of the evaluation of suspected intra-amniotic infection (IAI) and the results are available within 2 and 7 days. The objectives of this study are to validate the use of two commercially available kits (Mycoplasma IES y MYCOFAST(R)RevolutioN) for the identification ofUreaplasmaspp. andMycoplasma hominisin amniotic fluid, to compare the results of these kits with those obtained by culture and real-time polymerase chain reaction (qPCR) and to report the antibiotic sensitivity profile of the genital mycoplasms identified. Methods:This is a prospective cohort study including women with singleton and twin gestations between 16 and 36 weeks. Patients were admitted to perform an amniocentesis due to pregnancy complications considered at high risk for IAI (e.g. preterm labor with intact membranes, preterm prelabour rupture of membranes, short cervix, etc.), treatment of polyhydramnios, and for the assessment of fetal death and fever without a focus. Results:Overall, 93 patients underwent amniocentesis and 63 had results available for all tests. The prevalence of a positive culture was 6% (4/63). There were four cases ofUreaplasmaspp. and none ofMycoplasma hominis. The qPCR identified one case asUreaplasmaspp., one case asUreaplasma parvumand two cases asUreaplasma urealyticum. For all tests, the diagnostic performance was as

follows: sensitivity 100% [95% CI (39.8-100%)], specificity 100% [95% CI (93.9-100%)], positive predictive value 100% [95% CI (39.8-100%)] and negative predictive value 100% [95% CI (93.9-100%)]. In this cohort,Ureaplasmaspp. showed low resistance to erythromycin, but a high resistance to clindamycin and clarithromycin that may change according to the antibiotic concentration. Conclusions:To our knowledge, this is the first study that validates the use of theMycoplasmaIES and MYCOFAST(R)RevolutioN kits for the identification of genital mycoplasmas in amniotic fluid. The results of these kits are mostly available within 24 hours, have an excellent correlation with those from broth cultures and qPCR and characterize the antibiotic sensitivity profile of the genital mycoplasms identified, providing an opportunity for specific treatment in cases of IAI. Further validation studies in other populations are needed.

Palabras clave

Palabras clave de autor: Amniotic fluid culture; chorioamnionitis; MYCOFAST revolution; MycoplasmaIES; preterm prelabour rupture of membranes (pPROM)
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