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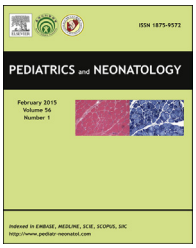

LETTER TO THE EDITOR

Vaginal Sampling of Amniotic Fluid in pPROM: A New Technique for Early Detection of Subclinical Chorioamnionitis?

To the Editor,

Perinatal infections, such as chorioamnionitis (Ch), are known risk factors for spontaneous preterm delivery, perinatal morbidity, and mortality. Hence, in the absence of positive confirmatory tests, the antibiotic treatment is often inappropriate because of inaccurate diagnosis. The incidence of histological chorioamnionitis (H-Ch) is higher than the clinically diagnosed infections. Therefore, Ch can be overlooked and undiagnosed, because a large fraction is subclinical-Ch (Sub-Ch) and the examination of placenta is not routinely performed, despite it being essential for diagnostic confirmation. To date there are no strategies to manage symptomatic preterm infants from mothers with Sub-Ch.[1] It should be important for clinicians to reach an early diagnosis.

Ascending infections rising through the vagina, which are the main causes of intrauterine involvement and Ch, have been associated with second trimester pregnancy loss, the consequent inflammatory process preceding labor. The reasons and mechanisms of major susceptibility to ascending infections during the second trimester of pregnancy remain unclear.[2] The pathogens in the amniotic fluid and, consequently, the intra-amniotic inflammatory (IAI) status represent risk factors for the occurrence of preterm delivery and neonatal sepsis.

In cases of AF microbial invasion or H-Ch, the IAI level is higher, suggesting that the placenta may play a role in the inflammatory response. Moreover, the severity of the inflammatory response is related to the depth of placental involvement.[3]

However, contrary to preterm labor with intact membranes, the IAI response does not predict the risk of spontaneous preterm delivery within 7 days in women with preterm premature rupture of membranes (pPROM). A longer exposure or a different pattern of inflammation, which reflects the contractility process, may explain the IAI influence on the origin of spontaneous preterm delivery.[2]

High-sensitivity CRP (hs-CRP) has been widely used in early Ch-diagnosis when clinical signs of infection are lacking, despite conflicting reports regarding its predictive value. One recent review declared that CRP could not be considered a predictor for Ch or neonatal sepsis following pPROM, as it seemed an ineffective marker, and thus was not recommended for pPROM management.[3]

In order to find clinical and laboratory Sub-Ch signs, a prospective observational cohort study in patients with pPROM was carried out. A vaginal scrub was performed and AF trans-cervical sampling for microbiological detection for diagnosis of pPROM; a placental biopsy was also performed (both on maternal and foetal sites) for histological and microbiological examinations, and an umbilical cord blood sampling for blood culture testing at delivery. Then the results of the early AF culture were matched with the histological placental examination and the umbilical cord blood culture tests, related to specific aetiological pathogens. The expectation was to find an unequivocal diagnosis between the AF culture results and the histological examinations. Otherwise, a strict correspondence between the results of the AF culture and the vaginal scrub was not expected. Early AF culture was speculated to lead to early diagnosis of Sub-Ch allowing for opportune treatment of this potentially dangerous clinical condition and thus avoiding its consequences including preterm delivery and perinatal complications, such as early neonatal sepsis.

Conflicts of interest

All authors declare no conflicts of interest.

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References

1. Wu HC, Shen CM, Wu YY, Yuh YS, Kua KE. Subclinical histologic chorioamnionitis and related clinical and laboratory parameters in preterm deliveries. *Pediatr Neonatol* 2009;**50**:217—21.
2. Cobo T, Kacerovsky M, Holst RM, Hougaard DM, Skogstrand K, Wennerholm UB, et al. Intra-amniotic inflammation predicts microbial invasion of the amniotic cavity but not spontaneous preterm delivery in preterm prelabor membrane rupture. *Acta Obstet Gynecol Scand* 2012;**91**:930—5.
3. van de Laar R, van der Ham DP, Oei SG, Willekes C, Weiner CP, Mol BW. Accuracy of C-reactive protein determination in predicting chorioamnionitis and neonatal infection in pregnant women with premature rupture of membranes: a systematic review. *Eur J Obstet Gynecol Reprod Biol* 2009;**147**:124—9.

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