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Bauters, E.^a, Jonckheere, S.^b, Dehaene, I.^c, Vandecandelaere, P.^b, Argudín, M.A.^d, Page, G.^a

Prevalence and clinical relevance of colonization with methicillin-resistant *Staphylococcus aureus* in the obstetric population (2022) *Journal of Maternal-Fetal and Neonatal Medicine*, 35 (25), pp. 8186-8191.

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^a Department of Obstetrics and Gynecology, Jan Yperman Hospital, Ypres, Belgium

^b Department of Laboratory medicine, Jan Yperman Hospital, Ypres, Belgium

^c Department of Obstetrics and Gynecology, Ghent University Hospital, Ghent, Belgium

^d Molecular Biology Laboratory, Tour R, Franklin, Cliniques Universitaires Saint Luc UCL, Brussels, Belgium

Abstract

Background and aims: Routine screening for Methicillin-Resistant *Staphylococcus aureus* (MRSA) in pregnant women is common practice in many hospitals. However, little is known on its prevalence and clinical relevance in this population. In this prospective longitudinal study, we aimed to investigate the MRSA prevalence in our obstetric population, the rate of vertical transmission of MRSA and the potential clinical relevance of MRSA colonization for both mother and child. A possible correlation between GBS and MRSA colonization was also investigated. Materials and methods: MRSA screening samples were collected at 35–37 weeks of gestation (from mother), at delivery and at discharge (from mother and newborn). All samples were analyzed by conventional microbiological methods and MRSA strains were subjected to spa-typing to investigate genetic similarity. The medical records of all positive mother-child pairs were analyzed to detect the occurrence of clinical infection in the postpartum period. Results: 679 mother-child pairs were included between June 2014 and July 2016. Maternal MRSA positivity rate was 1.3% at 35–37 weeks (vaginal/anorectal), 3.1% at delivery (nose/throat) and 3.6% at discharge (nose/throat). MRSA positivity in neonates was 0.3% at delivery and increased to 3% at discharge (nose/umbilicus). Almost all MRSA positive children were born to MRSA positive mothers (OR 120.40, 95% CI: 38.42–377.32). Genetic similarity of the MRSA strains found in mother and child was illustrated for all but one case. 57.7% of the cases of MRSA colonization in our cohort were associated with livestock exposure. 31% of the MRSA positive mothers developed an infectious complication in the postpartum period. No neonatal infectious complications were observed. GBS positivity was not a predictive factor for MRSA colonization in our cohort. Conclusion: The rate of MRSA colonization (overall 4.3%) in our obstetric population is similar to that described in the literature and that of the general population admitted to our hospital in the same period. Maternal MRSA colonization appeared to be an important risk factor for neonatal colonization. Whereas mothers were at higher risk of developing infectious morbidity in the postpartum period, no neonatal infectious complications were observed. We observed no correlation between GBS and MRSA colonization. © 2021 Informa UK Limited, trading as Taylor & Francis Group.

Author Keywords

colonization; GBS; Methicillin-resistant *Staphylococcus aureus*; mother-child; MRSA; pregnancy; risk factors

Index Keywords

oxacillin, RNA 16S; Article, bacterial colonization, bacterium isolation, child, cohort analysis, confidence interval, endometritis, female, genotyping, human, infectious complication, intensive care unit, livestock, major clinical study, male, mastitis, matrix assisted laser desorption ionization time of flight mass spectrometry, mecA gene, methicillin resistant *Staphylococcus aureus*, newborn, newborn period, nonhuman, nose, nuc gene, observational study, polymerase chain reaction, positivity rate, pregnancy, prevalence, prospective study, puerperium, scar, throat, umbilicus, upper respiratory tract infection, vagina, vagina smear, vertical transmission, genetics, heterozygote, longitudinal study, microbiology, prevalence, risk factor, *Staphylococcus aureus* infection; Carrier State, Female, Humans, Infant, Newborn, Longitudinal Studies, Methicillin-Resistant *Staphylococcus aureus*, Pregnancy, Prevalence, Prospective Studies, Risk Factors, *Staphylococcal* Infections

Correspondence Address

Bauters E.; Department of Obstetrics and Gynecology, Briekestraat 12, Belgium; email: emma.bauters@uzleuven.be

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