

Brief Communication

Obstetric Complications in Bacterial Vaginosis Cases

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Shortly following publication of our review paper, “Bacterial Vaginosis: A review of pathophysiology, epidemiology, complications, diagnosis, and treatment” in EJMS,¹ we had the opportunity to read with great interest Muzny and Sobel’s recent paper, “Understanding and preventing recurring bacterial vaginosis: Important considerations for clinicians” in the International Journal of Women’s Health.^{1,2} While their paper shares common ground with ours, it is worth noting the authors did not specifically address bacterial vaginosis’ significant obstetric complications, namely preterm labor, PROM, and PPROM.³ Our purpose in this brief communication is to shed light on these critical associations, complementing the insights provided by their paper.

As we have reviewed in our previously published paper, bacterial vaginosis (BV) is a common gynecological condition that has garnered significant attention due to its association with various obstetric complications. Identifying BV early in pregnancy is important for expectation-setting and close obstetric monitoring.

BV is associated with miscarriage (OR = 5.4) and premature rupture of membranes (PROM) and premature PROM (PPROM) (RR up to 7.3).^{4,5} BV also amplifies the risk of preterm labor and delivery (and accompanying low birthweight) among women at already high risk for such outcomes (previous preterm delivery or pre-pregnancy weight <50kg).³ Several cohort and case-control studies underscore the correlation between BV or its causative microorganisms and the occurrence of preterm labor and delivery, which puts infants at heightened risk for potential complications such as neonatal infections and incomplete neurological development.¹ Furthermore, the risk escalates for pregnant individuals who simultaneously have BV and other infections such as gonorrhea, chlamydia, or trichomonas. Such co-infections increase the likelihood of preterm delivery compared to cases of BV alone.⁶

The mechanisms behind BV’s role in precipitating preterm labor include bacterial virulence factors like sialidase, mucinase, and collagenase. These enzymes can degrade the protective mucous and tissue barriers, allowing pathogens to ascend into the fetoplacental complex and potentially trigger preterm labor and peripartum infections (such as postpartum endometritis). BV is also linked with chorioamnionitis, a condition that appears to contribute to the instigation of preterm labor.⁷⁻⁹ Although BV is associated with preterm birth, there is no official recommendation to screen for BV in pregnancy, as treatment does not reduce adverse outcomes.¹⁰ However, pregnant women in whom BV has been identified should be informed of the increased risk of adverse outcomes for both fetus and mother.

In conclusion, BV’s ties to preterm labor, PROM, and PPROM, as well as its synergistic effects with other infections, emphasize the need for clinical attention and continued research in this area. By recognizing BV’s role in precipitating obstetric complications, healthcare practitioners can proactively communicate and manage these risks to improve maternal and neonatal outcomes.

REFERENCES

1. Nasir R, Guilherme S, Puca D, Menoudakos D, Wang J, Hall R, Cheta M, Iyeke L, Richman M. Bacterial vaginosis: A review of

- pathophysiology, epidemiology, complications, diagnosis, and treatment. *Europasian J Med Sci.* 2023;5(1):1-10. <https://doi.org/10.46405/ejms.v5i1.457>
2. Muzny CA, Sobel JD. Understanding and preventing recurring bacterial vaginosis: Important considerations for clinicians. *Int J Women’s Health.* 2023;15:1317-1325. <https://doi.org/10.2147/IJWH.S383333>
3. Hillier SL, Nugent HP, Eschenbach DA, Krohn MA, et al. Association between bacterial vaginosis and preterm delivery of a low-birth-weight infant. *The Vaginal Infections and Prematurity Study Group. N Engl J Med.* 1995;333(26):1737-42. <https://doi.org/10.1056/NEJM199512283332604>
4. Donders GG, Van Bulck B, Caudron J, Londers L, et al. Relationship of bacterial vaginosis and mycoplasmas to the risk of spontaneous abortion. *Am J Obstet Gynecol.* 2000;183(2):431-7. <https://doi.org/10.1067/mob.2000.105738>
5. McGregor JA, French JL, Seo K. Premature rupture of membranes and bacterial vaginosis. *Am J Obstet Gynecol.* 1993;169(2 Pt 2):463-6. [https://doi.org/10.1016/0002-9378\(93\)90342-g](https://doi.org/10.1016/0002-9378(93)90342-g)
6. Hillier SL, Nugent HP, Eschenbach DA, Krohn MA, et al. Association between bacterial vaginosis and preterm delivery of a low-birth-weight infant. *The Vaginal Infections and Prematurity Study Group. N Engl J Med.* 1995;333(26):1737-42. <https://doi.org/10.1056/NEJM199512283332604>
7. Hitti J, Hillier SL, Agnew KJ, Krohn MA, et al. Vaginal indicators of amniotic fluid infection in preterm labor. *Obstet Gynecol.* 2001;97(2):211-9. [https://doi.org/10.1016/s0029-7844\(00\)01146-7](https://doi.org/10.1016/s0029-7844(00)01146-7)
8. Nelson DB, Macones G. Bacterial vaginosis in pregnancy: Current findings and future directions. *Epidemiol Rev.* 2002;24(2):102-8. <https://doi.org/10.2217/17455057.2.2.267>
9. Platz-Christensen JJ, Sundström E, Larsson PG. Bacterial vaginosis and cervical intraepithelial neoplasia. *Acta Obstet Gynecol Scand.* 1994;73(7):586-8. <https://doi.org/10.3109/00016349409006278>
10. Owens DK, Davidson KW, Krist AH, Barry MJ, & the US Preventive Services Task Force. Screening for bacterial vaginosis in pregnant persons to prevent preterm delivery: US Preventive Services Task Force recommendation statement. *JAMA.* 2020;323(13):1286-92. <https://doi.org/10.1001/jama.2020.2684>

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