

## Letter to the Editor

To the Editor:

We read with interest the article by Tam et al. claiming that Gram stain has a better sensitivity than Amsel's criteria for the detection of bacterial vaginosis during pregnancy ("Gram stain method shows better sensitivity than clinical criteria for detection of bacterial vaginosis in surveillance of pregnant, low-income women in a clinical setting," 1998;6:204–208). They argue that the method is reliable and cheap and therefore the test of choice for low-income women.

What the authors are describing is that *Gardnerella vaginalis* can be correctly identified by Gram stain, a statement that is not very evocative for a method designed to recognize and classify bacteria. The entity to be diagnosed is not the presence of *G. vaginalis*, but the presence of bacterial vaginosis. Fifty percent of women harbor *G. vaginalis* in the vagina in various amounts, most often without accompanying bacterial vaginosis. During pregnancy, it is the disturbance of the vaginal flora, not merely the presence of *G. vaginalis*, that is associated with preterm labor.<sup>1–3</sup> In a recent study, abnormal flora was associated with preterm birth, but anaerobic bacterial vaginosis was not.<sup>4</sup> In other studies, treatment with medication against anaerobes was not effective in preventing preterm birth.<sup>5</sup> Therefore, if one is looking for a useful screening tool during pregnancy, it ought to be broader than a simple screen for the presence of *G. vaginalis*.

Secondly, the article presents no data on pregnancy outcome, nor is there any cross-reference to an article containing such data, although the study setting would have been ideal or may even have been intended for this purpose. While only 51 women are discussed because they were symptomatic, whether this means bacterial vaginosis or not, we wonder if the authors could comment on the outcome of the whole group, in comparison with the *G. vaginalis* positives. Even if the authors elected not to publish these data because they found no association, we would urge them to do so. Instead, new evidence is emerging that it is not

only bacterial vaginosis that may be important, but rather a more general disturbance of the flora.

Even if *G. vaginalis* culture is taken as the benchmark, it is not clear why clinical criteria perform so poorly. One of the reasons may be that the authors used light microscopes with only 100–200 × magnification and no phase contrast. Also, the experience of the clinician using the microscope is likely to be of fundamental importance. Using 400 × magnification, with phase contrast, eight independent international researchers diagnosed clue cells and abnormal flora on air-dried specimens with correlation kappa indices above 0.85.<sup>6</sup> Abnormal flora may be more accurately detected by wet-mount examination than in Gram stains, as the preparation of the Gram or its reading may lead to underdiagnosis of the normal lactobacilli, reflected by the association of vaginal lactate concentrations with flora subtypes.<sup>7,8</sup>

Finally, in practical terms, Gram stain remains a laboratory-based test. Especially for low-income women, calling in the women for treatment may be inefficient, and the practical burden of inviting women for treatment for a seemingly harmless and asymptomatic condition may be straining and disappointing. Also, infestation with *Trichomonas* or *Mobiluncus* is easily recognized on wet mount, but not on Gram stain.

Phase-contrast microscopy of a fresh vaginal wet-mount specimen, if performed by experienced clinicians, may therefore remain a superior bedside test and cornerstone for assessing the infection-related prematurity risk in pregnancy.

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