### Supporting Information file 1.

| Authors                | Inclusion criteria                | Sample | Subjects | Techniques                  | Grading            | Period                  | Sampling frequency | Principal findings                                                                                                                                 |
|------------------------|-----------------------------------|--------|----------|-----------------------------|--------------------|-------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Priestley et al. (1997) [1] | No specific inclusion criteria are given | Vaginal self swabs | 26       | Gram stain, Vaginal pH, Culture | Nugent et al. (1991) [9] | Two cycles (8 weeks)  | Each day          | What should be regarded as normal vaginal flora?  
Is the finding of BV, Candida spp., M. hominis, U. urealyticum, or B-haemolytic streptococci on a single occasion in asymptomatic women significant?  
Is the finding of normal VMF on a single occasion in symptomatic women significant?  |
| Keane et al. (1997) [2]   | Non pregnant healthy women        | Vaginal self swabs | 21       | Gram stain, Vaginal pH       | Ison and Hay (2002) [10] | One cycle (25 to 35 days) | Each day          | 3 groups were found: A: Normal VMF throughout, B: Abnormal VMF throughout, C: Normal VMF in the beginning and then a transient shift to intermediate VMF or BV.  
The existence of group C was surprising. The onset of abnormal VMF in this group occurred mainly in the first part of the MC.  
pH values did not always rise throughout the menses and elevated values were also found in groups A and C which did not correspond to the presence or subsequent development of abnormal VMF.  
In group A and C there was a trend for the numbers of Lactobacilli to fluctuate throughout the MC.  
The use of OC did not appear to influence the Lactobacilli concentration in group A.  
GPC tended to appear mostly at the beginning of the menstrual cycle in groups A and C. |
| Authors                     | Inclusion criteria                                                                 | Sample       | Subjects | Techniques       | Grading      | Period             | Sampling frequency | Principal findings                                                                                                                                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------|--------------|----------|------------------|--------------|--------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hay et al. (1997) [3]       | Women treated, minimal 3 times, for BV in the previous 18 months and with stable relationships | Vaginal self swabs | 18       | Gram stain       | Nugent et al. (1991) [9] | 10 days – 10 months | Not specified     | Whether antifungal treatment was taken or not, in many cases candida arose, to be followed by BV. BV developed within 48 h of unprotected intercourse on only one occasion, and resolved after intercourse on 9 occasions. In most of the women BV resolved after 3 to 4 days’ treatment. Usually an intermediate VMF was present transiently. Relapse could occur within a few days. BV arose just before menstruation, or during menstruation more often than mid-cycle; a time when it was more likely to resolve. |
| Schwebke et al. (1999) [4]  | Premenopausal, nonpregnant women aged >18 years without clinical evidence of genital tract infection, including BV | Vaginal self swabs | 51       | Gram stain       | Nugent et al. (1991) [9] | 6 weeks           | Each day           | Maintenance of consistently normal VMF occurred in only a minority of women. Transient fluctuations in VMF were common and often marked, however, the incidence of symptomatic BV in this cohort approached 10%. Behaviors that were associated with unstable VMF are very similar to those that are associated with BV and STDs. There was no correlation between use of hormonal contraception and changing flora. An association between receptive oral sex and unstable VF was found. Strong similarities exist between the anaerobic bacteria associated with gingivitis and those associated with BV. Use of vaginal medication and the occurrence of menses were the only 2 diary variables associated with adverse changes in VMF the day after the behavior. Women who reported in their enrollment interview a greater number of sex partners in the past 12 months, more frequent episodes of vaginal intercourse, less frequent use of condoms, and use of spermicide were more likely to exhibit day-to-day changes in their VMF. |
| Authors          | Inclusion criteria                                                                 | Sample          | Subjects | Techniques                  | Grading            | Period                      | Sampling frequency | Principal findings                                                                                                                                 |
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| Eschenbach et al. (2000) [5] | 18–40 years, regular MCs, no or only 1 sexual partner, and no use of contraception other than condoms | Cervical swabs Vaginal swabs Urine specimen for culture | 74       | Gram stain Vaginal pH Culture | Nugent et al. (1991) [9] | 1 cycle (25 to 35 days) | 3 moments each: menstrual phase (days 1–5) preovulatory phase (days 7–12) postovulatory phase(days 19–24) | The number of subjects with high concentrations of Lactobacillus increased significantly over the menstrual cycle independent of the presence of BV, in contrast, the concentration of non-Lactobacillus species tended to be higher at menses. A statistically significant linear decrease occurred in the recovery of Prevotella species from subjects without BV over the menstrual cycle. Most VMF microorganisms were maintained at a rather stable rate over these 3 points of the menstrual cycle. C. albicans was associated with both vulvar erythema and pruritus on days 19–24 of the menstrual cycle. The volume of vaginal discharge increased and the amount of cervical mucus decreased over the menstrual cycle. |
| Morison et al. (2005) [6] | Asymptomatic, married, using no contraception, regular MC | Vaginal self swabs | 30       | Gram stain Nugent et al. (1991) [9] | Four cycles | Alternate days | Similar transient fluctuations over the menstrual cycle were found to those in industrialised countries. There was no evidence that sexual intercourse was associated with increased frequency of BV. The data did not support the hypotheses that menstrual hygiene materials might explain the high prevalences of BV found in sub-Saharan Africa compared to industrialised countries. We found a high degree of fluctuation in women’s patterns of vaginal flora over time. We also did not find any association between frequency of intercourse and BV in the following menstrual cycle. |
| Authors               | Inclusion criteria                                                                 | Sample                | Subjects | Techniques                  | Grading               | Period                             | Sampling frequency          | Principal findings                                                                                                                                                                                                 |
|----------------------|--------------------------------------------------------------------------------------|-----------------------|----------|-----------------------------|-----------------------|------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brotman et al.       | Non-pregnant women who reported the use of vaginal douche products in the 2 months before screening | Vaginal self swabs   | 39       | Gram stain                  | Nugent et al. (1991) | Four cycles (16 weeks)             | Twice weekly                   | Rapid fluctuations in vaginal bacterial communities were common. Women may have short episodes of bacterial vaginosis that spontaneously resolve without antibiotic treatment. Longitudinal studies may miss bacterial vaginosis episodes if samples are collected infrequently. Recent report of lubricant use and rectal sex were associated with incident bacterial vaginosis as defined by Gram stain. |
| Srinivasan et al.    | No specific inclusion criteria are given                                             | Vaginal self swabs   | 22       | Gram stain, qPCR (11 species) | Nugent et al. (1991) | 7-14d + at 2 weeks 3 and 4 weeks   | Each day (7-14) + at 3 additional moments | The microbiota of the human vagina can be highly dynamic. Healthy women are colonized with Lactobacillus species, but levels can change dramatically over a month. An increase in *G. vaginalis* levels associated with menses, accompanied by decreased quantities of *L. jensenii* and *L. crispatus* were observed. Participants with BV have diverse communities of fastidious bacteria that are depleted by vaginal metronidazole therapy. Women with recurrent BV initially respond to antibiotic treatment with steep declines in bacterial concentrations, but these bacteria later reemerge, suggesting that antibiotic resistance in these bacteria is not an important factor mediating BV recurrence. Recurrence of BV is associated with reappearance of BV-associated bacteria suggesting re-infection or resurgence from an endogenous reservoir. The rate of decrease of the BV bacteria with antibiotic treatment varies, suggesting that longer antibiotic treatments may be warranted in some women. |
| Authors | Inclusion criteria | Sample | Subjects | Techniques | Grading | Period | Sampling frequency | Principal findings |
|---------|-------------------|--------|----------|------------|---------|--------|-------------------|-------------------|
| Present study | Non pregnant women with a regular MC and no use of contraception, except condoms. | Vaginal self swabs | 17 | Gram stain Culture Vaginal pH | Verhelst et al., (2005) [11] | Two cycles (8 weeks) | Each day Each week At first and last visit Each day | There is a huge interindividual variability of predominant VMF present, however, the VMF of most subjects was rather stable. Besides Lactobacilli, GPC are important members of the VMF. L. crispatus was the species that was most negatively affected by the menses, the presence of the other lactobacilli did not change much. The increased presence of GPC seems to be the most characteristic feature in common to all disturbances of the VMF. There is a possible existence of an equilibrium between lactobacilli and GPC in normal VMF, which can be disturbed by menses and SI. Grade Ib may be an intermediate VMF, because it often followed or preceded grade II or IV VMF. Occasional sampling may miss episodes of BV or candidiasis and on the other hand may overemphasize the importance of an occasionally single positive swab. |

References

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