SEXUAL BEHAVIOURS AND PAST BACTERIAL VAGINOSIS (BV) CONTRIBUTE SIGNIFICANTLY TO BV RECURRENCE IN WOMEN RANDOMISED TO THE ORAL-CONTRACEPTIVE PILL

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Introduction:
Bacterial Vaginosis (BV) is a state of vaginal dysbiosis and is the most common vaginal complaint in women. Epidemiological data suggests that combined (oestrogen-progesterone) oral contraceptive pill (COCP) favourably alters the vaginal microbiota and lowers BV recurrence risk. We conducted a randomised controlled trial of COCP-use after antibiotic treatment to examine its effect on BV recurrence. While there was no change in recurrence rates by randomisation group, we found sex with the same pre-treatment regular sexual partner (RSP) and BV history both significantly increased BV recurrence risk in the parent study. We present vaginal microbiota data from women enrolled in the trial.

Methods:
Participants provided monthly specimens for up to 6 months or until BV recurrence. 472 vaginal samples from 75 participants were selected for microbiota composition analysis by 16s rRNA V3V4 amplicon sequencing on the Illumina MiSeq platform. Longitudinal vaginal microbiota data were analysed for bacterial diversity (Shannon Diversity Index) and changes in stability (Bray-Curtis dissimilarity between consecutive specimens). Regression analyses were used to assess factors associated with increased diversity and stability, taking into account multiple specimens from each participant.

Results:
Pre-treatment specimens had a *Gardnerella vaginalis* dominant or highly diverse vaginal microbiota. Post-antibiotic treatment, most women had a low diversity vaginal microbiota dominated by *Lactobacillus*. However, ongoing sex with the same RSP was associated with an increase in vaginal microbiota diversity (Shannon co-efficient=0.29,95%CI: 0.02,0.57,p=0.038) and an increase in the abundance of *G. vaginalis* (AOR:3.58, 95%CI:1.16,11.01,p=0.026) after adjusting for BV history and COCP use. BV history was associated with decreased vaginal microbiota stability.

Conclusion:
Women who had sex with the same RSP experienced an increase in bacterial diversity and a higher abundance of key BV-associated bacteria including *G.*

vaginalis. This supports mounting epidemiological evidence that reinfection with BV-associated bacteria drives post-treatment recurrence.

Disclosure of Interest Statement: