Factors associated with treatment failure following male partner-treatment for bacterial vaginosis

Authors:
Lenka A Vodstrcil[1-3], Erica L Plummer[1,2], Jane S Hocking[3], Christopher K Fairley[1,2], Natasha Wild[1,2], Laura G Matthews[1,2], Kay Htaik[1,2], Kathy Petoumenos[4], Eric PF Chow[1-3], Deborah Bateson[5], Sally Sweeney[6,7], Catriona S Bradshaw[1-3] *on behalf of the StepUp team*

[1]School of Translational Medicine, Monash University, Melbourne, Victoria
[2]Melbourne Sexual Health Centre, Alfred Health, Carlton, Victoria
[3]Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Victoria
[4]Kirby Institute, UNSW Sydney, New South Wales
[5]University of Sydney, New South Wales
[6]School of Medicine & Public Health, University of Newcastle, New South Wales
[7]Brightwell Health, Newcastle West, New South Wales

Background:
Recurrence of bacterial vaginosis (BV) after recommended antimicrobials in women with an ongoing sexual partner approaches 80%. We have shown by randomised controlled trial (RCT) that the addition of male partner-treatment with combined antimicrobials reduces recurrence over 12-weeks (controls: 63% recurrence *vs.* partner-treatment group: 35% recurrence; hazard ratio=0.37, 95%CI:0.22-0.61, p<0.001), demonstrating that reinfection is a significant driver of recurrence and amenable to intervention. We hypothesised that some women may experience post-treatment BV persistence and not experience the same benefit from partner-treatment. Data from participants in our RCT and pilot studies were combined to examine factors associated with BV at week 4.

Methods:
Women received recommended therapy and males received combination therapy with oral metronidazole 400mg and topical 2% clindamycin (for penile application) twice daily for 7 days. Participants provided questionnaires at enrolment, day 8 and week 4. Females provided vaginal smears for Nugent scoring (NS: 0-3=no BV, 4-6=intermediate-BV, 7-10=BV). We used Cox regression to assess factors associated with week 4 BV.

Results:
Across 165 treated couples, 35 (21%, 95%CI:15-28%) women had BV at week 4. At day 8, ten women (6%, 95%CI:3-11%) had a NS=7-10 and 58 (35%, 95%CI:28-43%) had a NS=4-10. Having a day 8 NS=4-10 was associated with a 4.5-fold increased risk of BV at week 4, relative to no BV (adjusted-HR=4.53, 95%CI:2.05-10.04). Women with an intrauterine device (IUD) *vs* no IUD had an elevated risk of BV at week 4 (AHR=2.15, 95%CI:0.98-4.73, p=0.056) that was of borderline significance.

Conclusion:
Male partner-treatment had a substantial impact on reinfection and recurrence, however, the association between non-optimal day 8 Nugent scores and week 4 BV, suggests persistence is occurring in a sub-group of women, which may be in part

mediated by IUD-use. Partner-treatment in combination with prolonged/alternative regimens for women to target persistent BV-organisms may further improve cure rates.

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