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## Metronidazole- and clindamycin-resistance of *Gardnerella vaginalis* in pregnant women with a history of preterm delivery

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**Background:** *Gardnerella vaginalis* has been isolated from 95% of bacterial vaginosis (BV) cases and encompasses 90% of the polymicrobial BV biofilm. Treatment of BV involves either systemic or topical administration of metronidazole or clindamycin and is aimed at resolving the symptoms and ensuring that follow-up screening is negative.

**Objectives:** BV treatment failure has been associated with preterm delivery (PTD) of low birth-weight infants and the aim of this study was to investigate the prevalence and antibiotic susceptibility of *G. vaginalis* in a group of women with a history of preterm delivery.

**Materials and methods:** A total of 301 pregnant South African women receiving antenatal care were selected to participate in this study. Patients were informed of the nature of the study and participation enlisted by means of a consent form. Vaginal samples were collected without a speculum using sterile cotton swabs, cultured on supplemented Columbia blood agar and incubated anaerobically for 48 hours. Antibiotic sensitivity to discs impregnated with 50µg metronidazole and 10µg clindamycin were recorded by measurement of the distance from the antibiotic disc to the edge of the area of bacterial growth and sensitivity interpreted as  $\geq 21$ mm for clindamycin and  $\geq 10$ mm for metronidazole. Resistance was recorded as zones of  $\leq 14$ mm and  $\leq 10$ mm respectively. *G. vaginalis* is known to be resistant to sulphonamides and it was thus included as a control.

**Results:** *G. vaginalis* was detected in 144 (47.8%) of the 301 (95% confidence interval (CI) 0.42-0.54) women studied of whom 78 (51.7%; CI 0.42-0.54) had a previous PTD. As indicated in Fig. 1, all *G. vaginalis* isolates (100%) from mothers with previous PTD were resistant to Metronidazole and 24.7% resistant to Clindamycin. Similar results were observed in the remaining mothers with no previous PTD (98.3% and 23.3% respectively).

**Conclusion:** BV treatment failure has often been attributed to the presence of *Atopobium* and not *Gardnerella*. This study suggests that the resistance of *G. vaginalis* to metronidazole and the emerging resistance to clindamycin may indeed be the cause. The use of other antimicrobials needs to be investigated if PTD is to be prevented in BV infected mothers.