

Relative Risk of Vaginal Candidiasis After Use of Antibiotics Compared with Antidepressants in Women

I am writing to note a possible concern with the control group used in the study by Wilton et al.^[1] on the relative risk of vaginal candidiasis after the use of antibiotics compared with antidepressants.

The authors used a prescription-event monitoring technology to compare the relative risks for developing vaginal candidiasis in women prescribed antibiotics with women prescribed antidepressants. Women prescribed an antibiotic showed a 10.70 relative risk of developing vaginal candidiasis after being prescribed an antibiotic, relative to women being prescribed sertraline, fluoxetine, paroxetine, fluvoxamine, venlafaxine or nefazodone. The authors chose this control group because "there was no pharmacological plausibility for vaginal candidiasis being associated with antidepressants".^[1] In fact, there is evidence that the selective serotonin reuptake inhibitor (SSRI) antidepressants have antifungal activity, both *in vitro* and *in vivo*. Lass-Flörl et al.^[2] showed sertraline, fluoxetine and paroxetine to have fungicidal properties toward *Aspergillus in vitro*, with sertraline and fluoxetine being the most potent. In a separate study, the same group showed sertraline to attenuate virulence of three strains of *Candida in vitro*.^[3] Finally, this group reported three cases of women with recurrent vulvovaginal candidiasis, who experienced no further infections after sertraline was prescribed for premenstrual dysphoric disorder.^[4] Each patient re-experienced vulvovaginal candidiasis after sertraline was discontinued.

Thus, it appears that a relative increase in risk of vaginal candidiasis in women prescribed antibiotics may be partly because of a reduction in risk among women prescribed SSRIs. The methodology of Wilton et al.^[1] allows for a possible test of SSRI antifun-

gal effects in a large clinical population if another control group, without antifungal effects, can be drawn from their database. Several commonly prescribed medications, including anti-inflammatory drugs, mucolytics and proton pump inhibitors have also been shown to have antibacterial effects and possible antifungal properties.^[5-7]

A PubMed search using generic drug names and the terms 'antifungal' or 'candida' did not reveal any publications relating to the antifungal effects of atenolol, atorvastatin, amlodipine, hydrochlorothiazide, furosemide, salbutamol (albuterol), simvastatin and metoprolol (although propranolol may have antifungal effects).^[8]

I wonder if it might be possible to use a control similar to this, where there are no known published reports of antifungal effects? If so, it should be possible to refine the risk of vaginal candidiasis in women prescribed antibiotics and to determine, for the first time, an estimate of the antifungal effects of SSRI antidepressants in a large clinical sample of women.

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