

**PREVENTING HIV THROUGH SAFE  
VOLUNTARY MEDICAL MALE CIRCUMCISION  
FOR ADOLESCENT BOYS AND MEN IN  
GENERALIZED HIV EPIDEMICS**

**WEB ANNEX 2.2**

**MALE CIRCUMCISION AND THE RISK OF HIV  
INFECTION IN WOMEN: SYSTEMATIC REVIEW  
AND META-ANALYSIS**

**Preventing HIV through safe voluntary medical male circumcision for adolescent boys and men in generalized HIV epidemics: recommendations and key considerations. Web Annex 2.2. Male circumcision and the risk of HIV infection in women: systematic review and meta-analysis**

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## WEB ANNEX 2.2

# MALE CIRCUMCISION AND THE RISK OF HIV INFECTION IN WOMEN: SYSTEMATIC REVIEW AND META-ANALYSIS

20th International Conference on AIDS and STIs in Africa, 2019; Kigali, Rwanda

### FRPEC216 – Male Circumcision and HIV Infection in Women – Systematic Review of Evidence

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**Background:** Women benefit indirectly from male circumcision because of reduced HIV acquisition and hence prevalence in men. Observational studies suggested HIV-negative women with HIV+ circumcised partner were less likely to acquire HIV than those with uncircumcised partner, but a randomized trial (RCT) of circumcision in HIV+ men suggested higher though not statistically significant risk of female HIV acquisition. To inform new WHO guidance on Voluntary Medical Male Circumcision (VMMC) for HIV prevention, we conducted a systematic review of impact of circumcision on HIV infection in women.

**Methods:** PubMed search for 'HIV infection' and 'male circumcision' identified 1 RCT and 6 observational cohort studies with data on HIV risk in women according to partner's circumcision status.

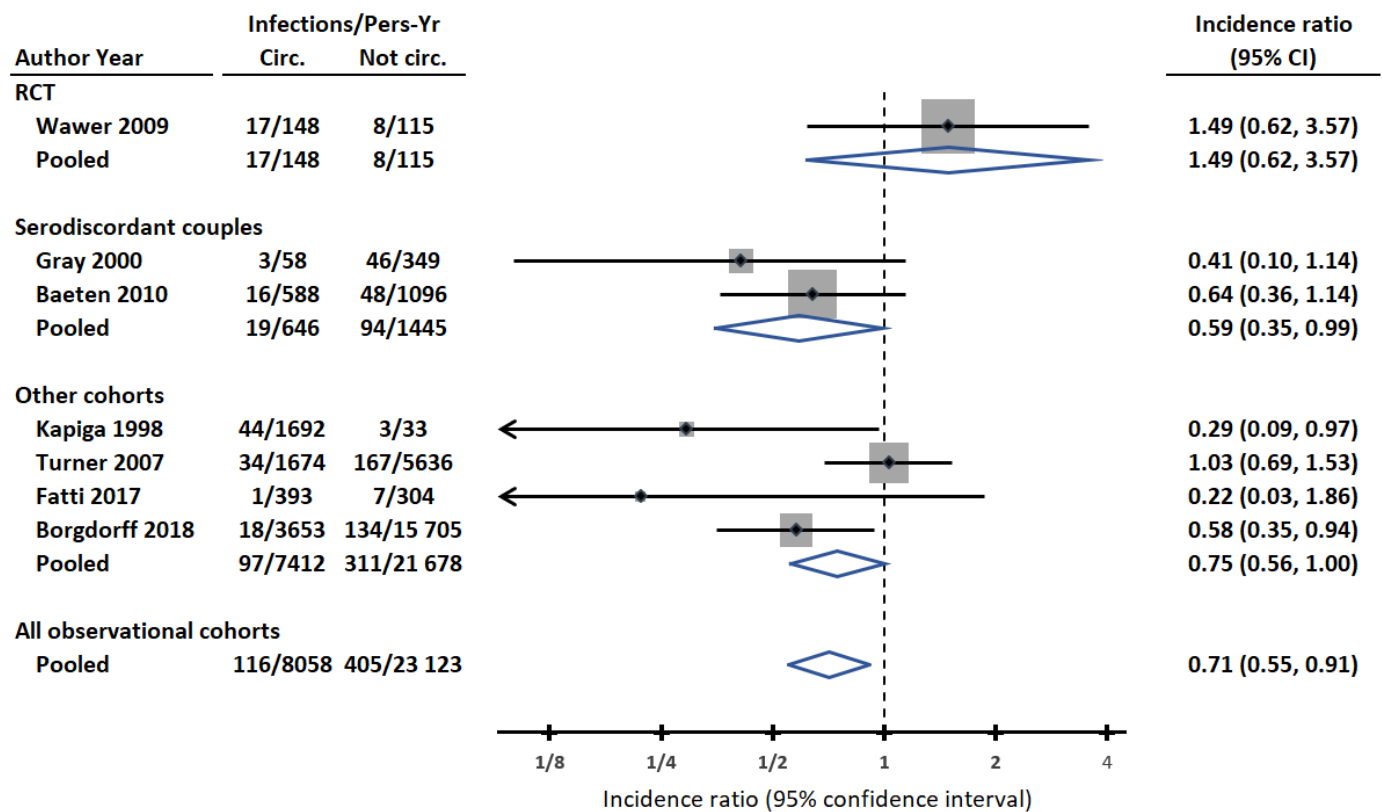
**Results:** HIV+ men in an RCT of immediate or delayed circumcision enrolled female partners to assess impact on women. HIV incidence was 11.5/100 py in partners of circumcised and 6.9/100 py of uncircumcised men (incidence ratio [IR] 1.6 [95% CI 0.6–3.7]). Excess risk was confined to couples who resumed sex before wound healing, consistent with a study of HIV+ men showing higher penile HIV shedding for 3 weeks following circumcision (Tobian PLoS Med 2015).

Two observational cohorts in serodiscordant couples showed lower incidence in partners of circumcised than uncircumcised HIV+ men (pooled adjusted IR 0.59 [0.35–0.99]). In 4 cohorts of women with undocumented or mixed partner HIV status pooled adjusted IR was 0.75 (0.56–1.00). See Fig. 1.

**Conclusions:** The discrepancy between the RCT and observational cohorts is likely explained by duration of exposure to the circumcised partner (several years in the observational studies, only recently in the RCT) and resumption of intercourse before wound healing. We believe there is biological plausibility for partners of circumcised men to be at lower long-term risk of HIV – less viral shedding after wound healing (Tobian PLoS Med 2015), fewer penile anaerobes following circumcision (Liu MBio 2013), lower incidence of bacterial vaginosis (BV) and severe BV in partners of circumcised men (Gray AJOG 2009) – but time until lower risk manifests is unknown. The short-term post-circumcision risk underlines the importance of HIV testing before VMMC, delaying VMMC for HIV+ men until stable on ART for their own health and preventing onward transmission, stressing sexual abstinence until wound healing, and the value of reaching adolescents prior to sexual debut.

Source: [www.professionalabstracts.com/icasa2019/iplanner/#!/presentation/2986](http://www.professionalabstracts.com/icasa2019/iplanner/#!/presentation/2986)

Fig. 1. Impact of circumcision on HIV incidence in women



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