Use of sexually transmitted disease risk assessment algorithms for selection of intrauterine device candidates

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Abstract:

Sexually transmitted diseases (STD) are an important contraindication for intrauterine device (IUD) insertion. Nevertheless, laboratory testing for STD is not possible in many settings. The objective of this study is to evaluate the use of risk assessment algorithms to predict STD and subsequent IUD-related complications among IUD candidates. Among 615 IUD users in Kenya, the following algorithms were evaluated: 1) an STD algorithm based on US Agency for International Development (USAID) Technical Working Group guidelines: 2) a Centers for Disease Control and Prevention (CDC) algorithm for management of chlamydia; and 3) a dataderived algorithm modeled from study data. Algorithms were evaluated for prediction of chlamydial and gonococcal infection at 1 month and complications (pelvic inflammatory disease [PID], IUD removals, and IUD expulsions) over 4 months. Women with STD were more likely to develop complications than women without STD (19% vs 6%; risk ratio = 2.9; 95% CI 1.3-6.5). For STD prediction, the USAID algorithm was 75% sensitive and 48% specific, with a positive likelihood ratio (LR+) of 1.4. The CDC algorithm was 44% sensitive and 72% specific, LR = 1.6. The data-derived algorithm was 91% sensitive and 56% specific, with LR = 2.0 and LR- = 0.2. Category-specific LR for this algorithm identified women with very low (< 1%) and very high (29%) infection probabilities. The data-derived algorithm was also the best predictor of IUD-related complications. These results suggest that use of STD algorithms may improve selection of IUD users. Women at high risk for STD could be counseled to avoid IUD, whereas women at moderate risk should be monitored closely and counseled to use condoms. PIP: This study aimed to evaluate the effectiveness of using risk assessment algorithms in predicting sexually transmitted disease (STD) and subsequent IUD-related complications among IUD candidates. The study population was selected among women who desired an IUD insertion in Nairobi, Kenya. The following algorithms drawn from the study of IUD use and HIV infection among these 615 IUD users were evaluated: 1) an STD algorithm based on US Agency for International Development (USAID) Technical Working Group guidelines; 2) a Centers for Disease Control and Prevention (CDC) algorithm for management of chlamydia; 3) a dataderived algorithm modeled from data. Algorithms were also evaluated for prediction of chlamydial and gonococcal infection at 1 month and complications (pelvic inflammatory disease, IUD removals, and IUD expulsions) at 4 months. Results showed that women with STDs were more likely to develop complications than women without STDs (19% vs. 6% risk ratio = 2.9; 95% CI, 1.3-6.5). In STD prediction, the USAID algorithm was 91% sensitive and 56% specific, with LR = 2.0 and LR = 0.2. Category-specific LR for this algorithm identified women with very low (1%) and very high (29%) infection probabilities. Thus, sexually transmitted disease was associated with increased risk for complications after IUD insertion. Moreover, it may be concluded that simple risk assessment criteria can assist in the identification of women at high and low risk for STD among women presenting for IUD insertion; it may also be concluded that

the use of simple risk assessment tools may facilitate the identification of women who require close observation, thus reducing the incidence of IUD-related complications.