Resident Research Day
Randi Goldman

TITLE: Patient-specific predictions of outcome after gonadotropin ovulation induction/intrauterine insemination.

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OBJECTIVE: To use patient-specific and cycle-specific characteristics to predict clinical pregnancy, multiple pregnancy, and spontaneous abortion rates after gonadotropin ovulation induction (OI)/IUI.

DESIGN: Retrospective chart review.

SETTING: Academic fertility center.

PATIENT(S): A total of 1,438 women who underwent 3,375 gonadotropin OI/IUI cycles.

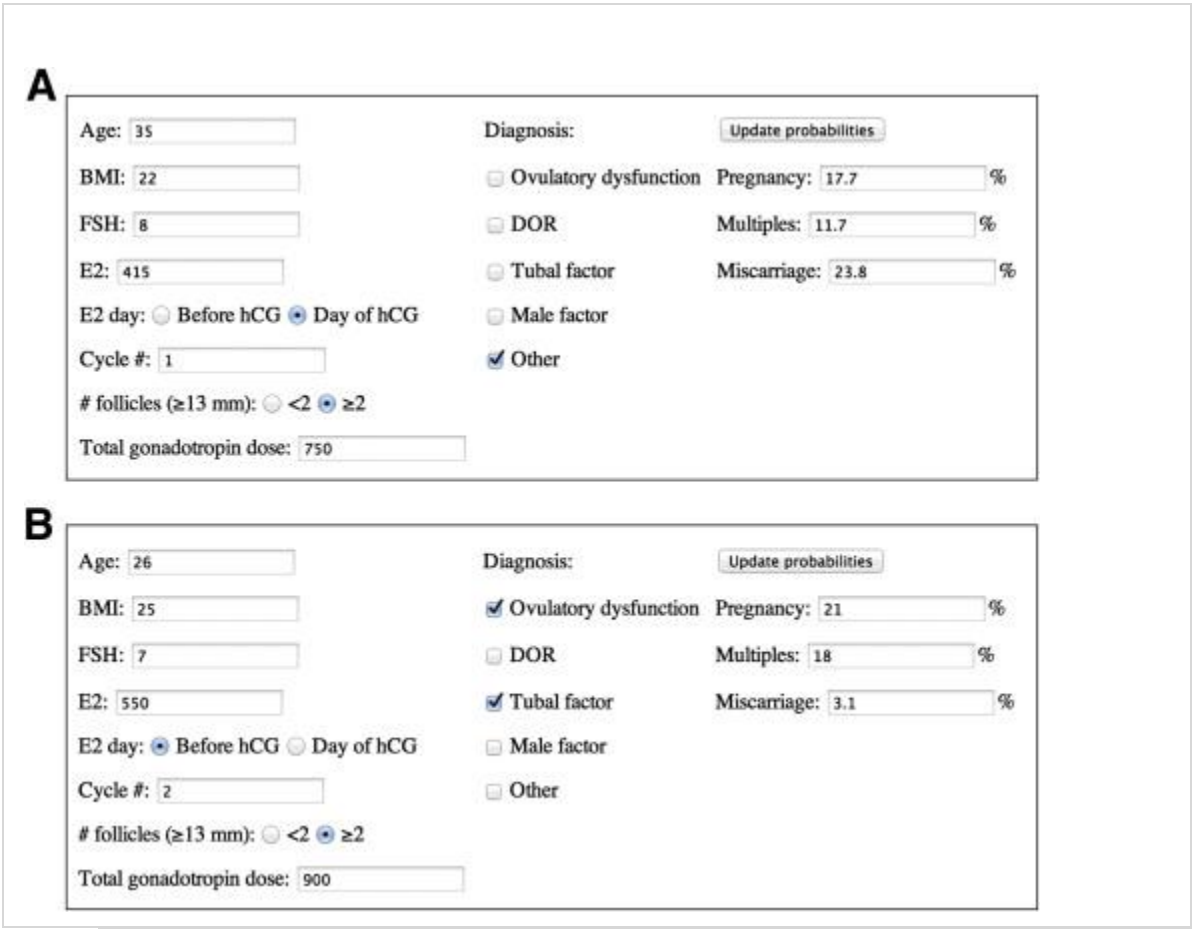
INTERVENTION(S): Individual and cycle-specific characteristics were evaluated to determine predictors of the rates of clinical pregnancy, multiple pregnancy, and spontaneous abortion. Logistic regression using individual parameters was used to create predictive models.

MAIN OUTCOME MEASURE(S): Clinical pregnancy (CPR), multiple pregnancy (MPR), and spontaneous abortion rates (SABR).

RESULT(S): Multiple predictors were identified for CPR, MPR, and SABR. The presence of at least two follicles $\geq$ 13 mm at ovulation trigger significantly increased CPR (odds ratio [OR], 95% confidence interval [CI] = 1.45, 1.18-1.78) and MPR (OR, 95% CI = 5.17, 2.16-12.41). An E2 level >400 pg/mL significantly increased MPR (OR, 95% CI = 9.54, 2.31-39.42). Logistic regression models were developed for individualized predictions of outcome.

CONCLUSION(S): Regression analysis reveals the patient and cycle-specific characteristics that are significant predictors of CPR, MPR, and SABR after OI/IUI. Logistic models using significant or nearly significant predictors for CPR, MPR, and SABR offer improved predictive power relative to simpler models, and allow for the development of a risk calculator for personalized patient counseling.

FIGURE:



Screenshot of a web applet using logistic regressions to estimate clinical pregnancy rate (CPR), multiple pregnancy rate (MPR), and spontaneous abortion rate (SABR) after IUI. (A, B) Sample data and predicted rates for two patients. The applet is intended for use by physicians and patients. BMI = body mass index; DOR = diminished ovarian reserve.