

First-trimester screening for Down syndrome in singleton pregnancies achieved by intrauterine insemination versus spontaneously conceived singletons

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INTRODUCTION: To investigate the effect of intrauterine insemination (IUI) on first-trimester screening for Down syndrome examined by maternal serum pregnancy-associated plasma protein-A (PAPP-A), free β -human chorionic gonadotrophin (HCG) and fetal nuchal translucency thickness (NT).

METHOD (S):

DESIGN: Retrospective, case-control study.

SETTING: Prenatal diagnosis laboratory of Cathay General Hospital.

SUBJECT (S): From Apr. 1999 to Jan. 2002, a total of 49 singleton pregnancies achieved by IUI (study group) and 175 singleton pregnancies conceived spontaneously (control group) were recruited in this study. Both the IUI group and the control group had the similar maternal age and body weight distribution.

INTERVENTION (S): Ovulation induction with clomiphene citrate and human menopausal gonadotrophin (HMG) were used in the IUI group. All the subjects received first-trimester screening program for trisomy 21 at 10-14 weeks' gestation. Fetal NT was measured by transabdominal ultrasound. Levels of maternal serum PAPP-A and free β -HCG were measured using an immunoassay analyzer.

MAIN OUTCOME MEASURE (S): All free β -HCG, PAPP-A and NT measurements were converted to MOM, calculated after correction for maternal weight and gestational age. Fetal birth weight and length were compared. Statistical analysis of data was performed with SPSS 8.0 software. Differences between the groups were compared using student t-test. $P < 0.05$ was considered significant.

RESULT(S): In the IUI pregnancies, the median PAPP-A was significantly increased from that in the control group (1.18 ± 0.77 VS 0.98 ± 0.51) ($P=0.007$). The median free β -HCG and the median fetal NT were not significantly different from those in the control group. Lower birth weight ($P=0.074$) and length ($P=0.019$) were observed in the IUI group than those in the control group.

CONCLUSION(S): The findings of this study suggest that in singleton pregnancies achieved by intrauterine insemination, the performance of first-trimester screening for trisomy 21 is likely to lead to higher false-positive rate than in natural conceptions. Smaller infants for gestational age are also observed in the IUI pregnancies.