

Pregnancies of unknown location after in vitro fertilization: A minimally invasive management protocol

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Objective: To describe the outcomes of a standardized protocol for the assessment of asymptomatic patients with pregnancies of unknown location (PUL) following IVF-embryo transfer (ET).

Design: Retrospective cohort study

Materials and Methods: All IVF±ICSI cycles using autologous oocytes with fresh and cryothaw day 3 or day 5 ET between 1/2005 and 12/2011 at our center were reviewed (n=3607). Asymptomatic patients with serum β -hCG \geq 6 mIU/mL and no intra- or extra- uterine pregnancy on ultrasound were diagnosed with PUL (n=251). Of these, patients with abnormal β -hCG trends (rise $<$ 53% or decline $<$ 15% over 2 days) underwent endometrial sampling with Karman cannula aspiration (n=45). Patients with no chorionic villi identified on pathology and inadequate post-sampling decline in β -hCG ($<$ 15%) received IM methotrexate (MTX, 50 mg/m²) for presumed ectopic pregnancy. The primary outcome measure was the proportion of PUL with confirmed failed IUP who avoided MTX by this intervention. Statistical analysis performed with SPSS version 21.

Results: A total of 31 (69%) patients were diagnosed with non-viable IUP by pathology and/or an adequate drop in post-sampling β -hCG titer. Ten of these had adequate post-sampling serum hCG declines with negative pathology. The remaining 14 patients (31%) were diagnosed with presumed ectopic by persistent post-sampling β -hCG and negative pathology, and were treated with MTX; one (2.2%) later required laparoscopy for ruptured ectopic pregnancy. No complications of endometrial sampling with Karman cannula were reported.

Conclusion: In asymptomatic patients with PUL and abnormal β -hCG trends following IVF-ET, endometrial sampling using a Karman cannula in the outpatient setting is convenient, safe and effective. Two-thirds of these patients may avoid unnecessary MTX. While further, prospective studies are needed, this study demonstrates the feasibility and utility of our protocol.