

scored by microscopic evaluation as negative, weak, moderate, or strong. Cotinine was assessed in follicular fluid (FF) samples as a marker of recent smoke exposure and dose.

Material and Methods: Twelve couples from our IVF-ET program participated after signing a consent form. Three women were active smokers of 4 to 20 cigarettes per day (c/d); these had 3 embryos for analysis. Four women were passive smokers (husbands smoked 10 to 20 c/d); these had 8 embryos. Five women were non-smokers (with non-smoking husbands); these had 5 embryos. FF samples were assessed for cotinine by radioimmunoassay. Spare embryos with 3 to 8 blastomeres, some with fragments, were prepared for immunocytochemistry. These were treated with anti-B[a]P diolepoxide monoclonal antibody, biotinylated secondary antibody, and streptavidin-conjugated peroxidase.

Results: Mean (\pm SE) levels of FF cotinine in active smokers were 269.2 ± 53.9 ng/mL; in passive smokers 1.23 ± 0.13 ; and in non-smokers 0.458 ± 0.06 . Immunoreaction in the blastomeres of embryos was stronger in the nuclei than in the cytoplasm. All 11 embryos from the seven smokers (active and passive) revealed a positive reaction; the intensity of immunostaining ranged from weak to moderate. In non-smokers three embryos were negative and two were positive; immunostaining ranged from negative to weak. There was variation of immunostaining intensity between embryos of women, within embryos of a woman, and between blastomeres in an embryo.

Conclusions: Immunoreaction in the nuclei of embryos suggests that B[a]P binds covalently, forming DNA adducts. Presence of B[a]P-DNA adducts suggests that these embryos may be at risk of DNA damage. Detection of adducts in embryos of active and passive smokers indicates that these women may be at risk of failure or loss of pregnancy. Supported by the MRC of Canada (Ottawa, Ontario, Canada).

P-134

MAG Mucin Expression Abnormalities in Natural Cycle Biopsies Predict Subsequent IVF Failure. ¹H. J. Kliman, ²L. I. Barmat, ¹F. F. Wang. ¹Department of OB/GYN, Yale University, New Haven, CT, and ²Department of OB/GYN, Cornell Medical Center, NY, NY.

Objectives: We have previously shown that MAG mucin expression abnormalities in endometrial biopsies are correlated with reproductive outcome in patients with longstanding infertility and in donor/recipient IVF cycles. In this study we attempted to determine if the expression of MAG in a natural cycle prior to a medicated IVF cycle predicted IVF success.

Design: A retrospective blinded analysis of immunostained endometrial biopsies and subsequent IVF outcome.

Materials and Methods: Natural cycle endometrial biopsies were collected from 77 patients. Biopsies were fixed in formalin, paraffin embedded and immunohistochemically stained for MAG, progesterone receptor (PR), ABO blood group antigens, MUC1 (+control), and normal mouse ascis-

tes (-control). MAG mucin expression was only analyzed in blood group A patients as previously described (AJP, 146:166-181, 1995). Normal MAG expression was defined as glandular Golgi staining between cycle days 5 and 16, progressive secretion of glandular MAG between cycle days 17 and 19, and absence of glandular MAG between cycle days 20 and 27. Glandular MAG reappears just prior to menses and is normally present in gestational endometrial glands. Hematoxylin and eosin stained sections were used for endometrial dating of the stroma and glands according to the criteria of Hendrickson and Kempson. Clinical pregnancies were defined as an intrauterine sac with a fetal heartbeat by 7 weeks gestational age. The Fisher's exact test was used where appropriate.

Results: Seventy-seven endometrial biopsies were examined. Forty-three patients were the appropriate blood type (A or AB) for MAG analysis, of which 34 completed their IVF cycles. There was a statistically significant ($p = 0.034$) difference in clinical pregnancies between the normal and abnormal MAG expression groups (40% versus 0%; see table). Also, the abnormal expression of MAG mucin was highly predictive (neg predictive value = 100%) of a failed IVF cycle. PR and MUC1 expression were not significant related to pregnancy outcome.

	Abnl MAG	NI MAG
Not preg	9	15
Preg	0	10

Conclusions: Abnormal MAG mucin expression in natural cycle biopsies may predict failures in reproductive outcome. Absence or delayed expression of MAG mucin may represent an alteration in the complex endometrial autocrine/paracrine network that leads to successful implantation and pregnancy. An understanding of the factors that regulate endometrial MAG mucin expression may lead to therapeutic tools that will improve IVF pregnancy rates.

P-135

Periovulatory Hormonal Patterns Are Not Predictive of IVF Outcome. S. D. Spandorfer, E. S. Sills, P. H. Chung, I. Kligman. The Center for Reproductive Medicine and Infertility, The New York Hospital-Cornell University Medical College, New York, NY.

Objectives: Periovulatory hormonal values are often utilized as a predictor for IVF success. The meaning of these values is controversial. The purpose of this study was to analyze periovulatory hormonal values as a predictor of IVF outcome.

Design: Prospective study.

Materials and Methods: 400 consecutive IVF patients that underwent retrieval after a luteal leuprolide acetate stimulation were included in the study. E2 and P4 were analyzed by commercial RIA (Pantex, USA). For this study, E2 values were analyzed on the day of hCG administration (E2 - 0) and the day after (E2 + 1) and P4 values were analyzed before hCG administration. Comparisons