found when comparing the mean values for age, day 3 FSH, day 3 LH, day 3 Estradiol, diagnosis, and number of cycles completed. Compared to ovarian cysts measuring 10.0 to 19.9 mm, cysts ≥ 20.0 mm more likely to persist into the subsequent cycle ($p = 0.03$, OR 10.50, 95% CI 1.13 to 131.1).

Conclusions: These data demonstrated the incidence of ovarian cysts to be 15.4% in clomiphene citrate ovulation induction cycles. Based on these data, age, diagnosis, basal hormone levels, and number of cycles completed did not predict the occurrence of ovarian cysts. Compared to pretreatment ovarian ultrasounds, patients were significantly more likely to have an ovarian cyst after clomiphene citrate therapy. Likewise, ovarian cysts ≥ 20.0 mm were significantly more likely to persist for more than one cycle. These data suggest that transvaginal ultrasound measurements may not be necessary in the first pretreatment cycle of clomiphene citrate therapy; however, ultrasounds should be performed during all subsequent cycles as the incidence of finding an ovarian cyst is 21.5%.

Supported By: TAMC.

Wednesday, October 24, 2001
3:45 P.M.

O-252

Intrauterine misoprostol: a new high effective treatment of missed abortion. C. Poveda, E. M. Ruiz, Z. Campos, R. G. De Leon, B. Grajales, C. E. Moreno. Ctr for Research in Human Reproduction, Gorgas Commemorative Institute for Health Study, Panama, Panama.

Objective: The aim of this study was to evaluate the efficacy and safety of 200 mcg misoprostol suspension placed intrauterine as an alternative treatment method in patients with missed abortion.

Design: A prospective clinical trial to investigate the feasibility of intrauterine misoprostol as medical treatment in missed abortion up the 12 weeks of amenorrhoea.

Materials/Methods: A total of 25 women with diagnosis of missed abortion less than 12 weeks were evaluated between January-December of 2000. All patients were asymptomatic and did not have a relevant medical history. To each patient an intrauterine and extraamniotic suspension composed by 200 mcg of misoprostol diluted in 4 cc of saline solution was administered through insemination catheter (Mackel®). A clinical and sonographic follow-up were performed 24–48 hours post application. Moreover, a complete blood count test control was made when the bleeding ends. We also evaluate the uterine cavity by histerosonography in the next menstrual cycle in order to discard any local side effect of the suspension.

Results: The mean age was 28.35 + 4.33 years, 44% were nuliparous and 66% had at less 2.1 + 1.4 pregnancies. The gestational average was 84.7 + 27.5 days. The rate of success (complete abortion expulsion) was 96% (24/25), confirmed by ultrasound, with a mean time for onset of bleeding at 19 hours. Only three patients (12%) required an additional doses 24 hours later. The duration of bleeding was 79.8 hours with a significant drop of haemoglobin level after treatment (1.26 + 0.9 g) ($p < 0.01$). Nevertheless, no patient suffered from excessive bleeding or required blood transfusion. We did not find any clinical or laboratory data of infection and all histerosonography performed were normal. Also, our results were analyze by groups according gestational age and previous pregnancies and there were no significant differences. Twenty-three patients (92%) were satisfied with the procedure. Although, nine patients have a previous instrumental evacuation, eight (88%) report that they would prefer the medical treatment.

Conclusions: This study suggest that the use of intrauterine misoprostol is a high effective and safety alternative medical treatment in patients with missed abortion up to 12 weeks.

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Wednesday, October 24, 2001
4:00 P.M.

O-253

Cytogenetic analysis of miscarriages of couples with recurrent miscarriage: a case-control study. K. A. Awartani, W. P. Robinson, M. D. Stephenson. Dept of Obstetrics & Gynecology, Univ of British Columbia, Vancouver, BC, Canada; British Columbia's Research Institute for Children's & Women's Health, Dept of Medical Genetics, Univ of British Columbia, Vancouver, BC, Canada; British Columbia's Women's Hosp & Health Ctr, Dept of Obstetrics & Gynecology, Univ of British Columbia, Vancouver, BC, Canada.

Objective: To determine the distribution of chromosome abnormalities in miscarriages of couples with recurrent miscarriage, and to compare to historic controls from sporadic miscarriages.

Design: A case-control study. A Recurrent Pregnancy Loss Database (ACCESS '97), developed by the author (MDS), was used to identify couples seen in the British Columbia Recurrent Pregnancy Loss Program from 1992 to 2000.

Materials/Methods: University and institutional ethics approval was obtained. Inclusion criteria were couples with (1) a history of recurrent miscarriage, defined as three or more documented consecutive pregnancy losses before 20 weeks of gestation, (2) at least one miscarriage with a cytogenetic diagnosis using Giemsa banding. The distribution of results was compared to published data of sporadic miscarriage (Jacobs and Hassold, 1987). In addition, the results were stratified according to maternal age and compared to historic controls (Hassold and Chiu, 1985). Distributions were compared using a Chi-square test.

Results: A total of 285 couples met the inclusion criteria. The median number of miscarriages was 4 (range 3–12) and the mean maternal age at time of miscarriage was 34 years (range 19–46 years). There were 420 miscarriages with cytogenetic diagnoses. The estimated gestational age at time of demise, determined by ultrasonography, embryopathology or symptomatology, was less than 6 weeks in 29/420 (7%), between 6 and under 10 weeks in 290/420 (69%) and at least 10 weeks in 101/420 (24%). Of the 420 miscarriages, 53% were euploid (118 were 46,XX, 105 were 46,XY). Trisomy was found in 31%, polyploidy in 9%, monosomy X in 4%, and structural abnormalities in 2%. Overall this distribution differed significantly from the 7,182 sporadic miscarriages reported by Jacobs and Hassold (p 0.02). Specifically, monosomy X was found less frequently and trisomy was found more frequently in the recurrent miscarriage cohort. When stratified for maternal age, more euploid miscarriages were observed in women with recurrent miscarriage aged 18-29 years (64% vs. 52%, p 0.046) and aged 30-35 years (63% vs. 48%, p 0.001). There was no difference in women aged 36-39 years, or aged 40 years and older. There was no difference in the distribution of trisomy, polyploidy, or monosomy X when stratified by maternal age.

Conclusions: This is the largest case-control study to compare the distribution of miscarriage cytogenetic diagnoses in couples with a history of recurrent miscarriage to the general reproductive population. The frequency of euploid pregnancy loss was higher in the women with recurrent miscarriage under 36 years of age at the time of miscarriage. There was no difference in distribution of cytogenetic diagnoses, i.e. trisomy, polyploidy, monosomy X, between the two groups, when stratified by maternal age at the time of miscarriage. Cytogenetic analysis is an essential component in the evaluation of couples with miscarriages since sporadic loss, due to an abnormal number of chromosomes, is a common occurrence.

Supported By: The Medical Research Council of Canada.

Wednesday, October 24, 2001
4:15 P.M.

O-254

Poor response to ovarian hyperstimulation predicts spontaneous ovulation. K. M. Silverberg, R. A. Ormand, L. J. Hansard, T. C. Vaughn. Texas Fertility Ctr, Austin, TX.

Objective: Spontaneous ovulation has been reported to occur in less than 10% of cycles of controlled ovarian hyperstimulation with gonadotropins. Nevertheless, it presents a frustrating dilemma to both practitioners and patients alike. Previous studies of this phenomenon have failed to demonstrate factors that allow prospective identification of patients at risk for spontaneous ovulation. This study was designed to examine both demographic factors and response to stimulation in order to identify factors that may predict potential spontaneous ovulation.

Design: Prospective trial in a private practice setting.

Materials/Methods: All patients receiving either highly purified urinary or recombinant follicle stimulating hormone (hp-FSH or rFSH) therapy com-

bined with intrauterine insemination (IUI) from January, 1998, through August, 2000, were included in this analysis. Patients were monitored with serial transvaginal sonography and serum estradiol (E2) levels. According to the standard stimulation protocol, human Chorionic Gonadotropin (hCG) was administered when at least one follicle exceeded 19 mm in average diameter. IUIs were performed on the subsequent 2 days following hCG administration. Spontaneous ovulation was defined as the absence or collapse of a dominant follicle on serial sonography combined with a plateau or fall in serum E2 level. Statistical analysis was performed using the Student's t-test.

Results: A total of 762 cycles were included in this analysis. Spontaneous ovulation occurred in 54 (7.1%) cycles (Group A). 708 cycles proceeded to hCG administration (Group B). A comparison of cycle characteristics (means ± SEM) is presented below. Cycles ending in spontaneous ovulation were characterized by fewer dominant follicles (18 mm), fewer total follicles > 14 mm, and lower peak E2 levels. There is a 67% chance that spontaneous ovulation will occur if a patient develops less than 3 follicles greater than 14 mm during stimulation, and/or if the peak estradiol level is less than 800 pg/ml. To the contrary, if a patient develops 3 or more follicles greater than 14 mm during stimulation, there is a 96.7% chance she will not spontaneously ovulate. In addition, if the peak estradiol level exceeds 800 pg/ml, there is a 95.6% chance that she will not ovulate spontaneously. There were no differences in patient age, weight, days of stimulation, or total dose of gonadotropins administered in patients ovulating spontaneously and those ovulating following the administration of hCG.

	Age	Wt (lbs)	Days stim	Total dose (IU)
Group A	36.5	148.5	9.93	2067.4
Group B	34.4	149.1	9.07	1775.8
P value	0.147	0.429	0.710	0.494

	# Amps	# Foll < 18	# Foll > 14	Peak E2
Group A	27.57	0.745	2.154	643.2
Group B	23.68	2.055	4.004	1024.6
P value	0.523	<0.01	<0.01	<0.01

Conclusions: The risk of spontaneous ovulation in cycles of controlled ovarian hyperstimulation with gonadotropins appears to be increased in patients who respond less vigorously to gonadotropin stimulation. Increased awareness of total follicle number >14 mm and serum estradiol level may aid in the adjunctive use of preventative measures such as GnRH agonists or antagonists during controlled ovarian hyperstimulation to preclude spontaneous ovulation.

Wednesday, October 24, 2001
4:30 P.M.

O-255

Family history as a risk factor for development of uterine fibroids—results of a pilot study. B. Van Voorhis, P. Romitti, M. Jones. Univ of Iowa Coll of Medicine, Dept of Obstetrics & Gynecology, Iowa City, IA; Univ of Iowa Coll of Medicine, Dept of Preventive Medicine, Iowa City, IA.

Objective: To determine 1) the association between maternal history of fibroids and fibroids in women under the age of 50 and 2) the ability of subjects to report family history of fibroids.

Design: We performed a hospital-based case-control study with cases being women found to have pathologically confirmed fibroids and controls being women with no fibroids after pathologic examination of the uterus or by transvaginal ultrasonography.

Materials/Methods: All women were sent a questionnaire that included 52 items regarding medical history, reproductive history, social history, family history and demographic information. Dichotomous variables were compared by Fisher's exact test, categorical variables by Pearson's chi-square and continuous variables by both the t test and the Wilcoxon rank-sum test. Univariate logistic regression was used to assess each potential risk factor in predicting case-control status. Those variables deemed clinically important or that were significant by univariate analysis were entered into a multiple logistic regression for the purpose of attaining the final model.

Results: 81 of 169 (47.9%) cases and 103 of 214 (48.1%) of controls completed the questionnaire. By multiple logistic regression, significant risk factors for the presence of fibroids were maternal history of fibroids (odds ratio = 2.85, confidence intervals 1.25–6.52) and reduced parity (odds ratio = 0.75, confidence intervals 0.57–0.98). The protective effect of parity increased linearly to the number of children. Increasing age before the age of 50 was nearly significant as a risk factor (odds ratio = 1.07, confidence intervals 1.00–1.15). Cases with a positive maternal history of fibroids tended to be younger when the fibroids were first diagnosed as compared to cases with no maternal history of fibroids (38 versus 42.5 years, p = 0.14). 24% of subjects did not know the maternal history of fibroids, while 29% and over 50% were not aware of this history in a sister or grandmother, respectively. Extended family histories of fibroids could not be ascertained by this questionnaire-based study.

Conclusions: Our results suggest that a maternal history of fibroids may be the biggest risk factor for development of fibroids in a largely Caucasian population of women. Further studies are needed to better understand the possible genetic contribution to the development of uterine fibroids. Given the ascertainment bias inherent in second-hand maternal histories, future studies should assess maternal fibroid presence by ultrasonographic or pathologic evaluation.

Wednesday, October 24, 2001
4:45 P.M.

O-256

Presumed diagnosis of ectopic pregnancy? K. T. Barnhart, I. Katz, A. C. Hummel. Univ of Pennsylvania Medical Ctr, Philadelphia, PA; Univ of CA San Fransico Medical Sch, San Fransisco, DE.

Objective: The diagnosis of ectopic pregnancy (EP) is frequently aided by the use of a diagnostic algorithm using logic to rule out the presence of an intrauterine pregnancy (IUP). In an effort to safe time, avoid a dilatation and curettage (D&C), and treat with medical management, often the presence of an EP is presumed. An EP is presumed when an IUP is not visualized with vaginal ultrasound in conjunction with a high human chorionic gonadotropin (hCG) or when serial hCG values below a discriminatory zone (DZ) do not rise or fall normally. The purpose of this study is to evaluate the accuracy of the diagnosis of a presumed ectopic pregnancy.

Design: A retrospective cohort analysis.

Materials/Methods: A clinical database of all gynecologic procedures performed in a two year period was searched to identify a cohort of women who underwent a D&C to "rule out" an EP, who may have otherwise have been considered as a "presumed EP." Preoperative diagnosis included clinically stable pregnant women with a hCG above 2000 mIU/ml and no evidence of an IUP by ultrasound, or women with an abnormal rise or fall of serial hCG below 2000 mIU/mL. Outcome was definitively determined by pathologic evidence of chorionic villi in the endometrial curettings (or the fallopian tube), or complete resolution of hCG from the serum. The incidence of EP and miscarriage was calculated and compared.

Results: A total of 111 cases were identified. The average (+ SD) age was 28.8 + 6, parity of 1.4 + 2, and hCG level 2460 + 4800. Overall, 70/111 (63%) women were diagnosed with an EP and 41/111 (37%) were diagnosed with a miscarriage. There was no statistical difference in race, age, prior parity, or hCG level between the two groups. Women were more likely to be diagnosed with an EP if the indication for D&C was an abnormal rise or fall of the hCG below the DZ: (EP 53/76; 70% and miscarriage 23/76; 30%), compared to women whose indication for D&C was an hCG above 2000, (EP 17/35; 49% and miscarriage 18/35; 51%): RR 2.44 (95% CI 1.07 – 5.52 P = 0.03). Ultrasound was helpful but not definitive in the diagnosis of these women. Overall, in 12% of the cases ultrasound suggested a miscarriage, in 58% ultrasound was non-diagnostic and 19.5% it suggested and EP. Of those ultimately diagnosed with a miscarriage the ultrasound suggested SAB 25%, was non-diagnostic 62% and suggested EP in 0%. In those ultimately diagnosed with an EP: ultrasound suggested SAB 6%, was non-diagnostic 54% and suggested EP 33% (P = 0.001).

Conclusions: The presumed diagnosis of an ectopic pregnancy is inaccurate in up to 50% of the cases. Women at risk for an ectopic pregnancy with a hCG value above an established discriminatory zone and a non-diagnostic ultrasound are equally likely to have a competed miscarriage or