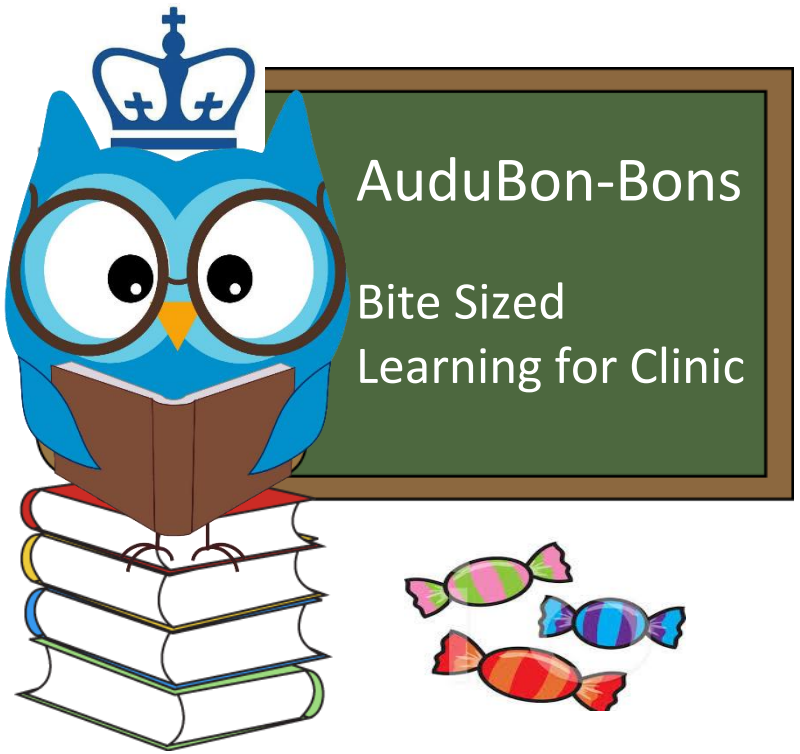
SECONDARY INFERTILITY



Week 100

Prepared By: **Annie Fu, MD**

Reading Assignment:
ACOG Committee Opinion #781, “Infertility Workup for the Women’s Health Specialist”

LEARNING OBJECTIVES 

- To review the definition, common causes, and workup for secondary infertility
- To understand the initial management of secondary infertility

CASE VIGNETTE

Your patient is a 30 yo G2P1011 woman who presents for a GYN visit. She reports difficulty conceiving with her husband. They have been trying to conceive for 2 years. She has one child with her husband; states she had no difficulty conceiving for that pregnancy. She denies any other issues.

HISTORY

What elements of the patient's history are most relevant?

- **PMH**: Denies
- **PSH**: D&C for EPF
- **OBHx**: G1-EPF @ 6 weeks; G2-FT NSVD, uncomplicated
- **GynHx**: LMP 2 weeks ago; history of regular cycles; reports dysmenorrhea and heavy menstrual bleeding; denies STIs, abnormal paps, fibroids, cysts; used OCPs in the past for contraception but has not used any BC x 2 years
- **FH**: Mother and sister with fibroids
- **SH**: Denies T/E/D; works as an English professor; lives with husband and son; denies IPV
- **Meds**: Multivitamin
- **All**: Seafood

PHYSICAL EXAMINATION

What elements of the patient's physical exam are most relevant?

***VS**: BP 138/70, P 77, RR 14, Height 165 cm, Weight 78kg, BMI 28.7 kg/m^2*

Gen: NAD

HEENT:oropharynx clear, no thyromegaly, no lymphadenopathy

Breast:Normal appearance, symmetric; no masses, lesions, skin changes; nontender to palpation; no discharge

Chest: CTAB

CVS: RRR

Abd: Soft, Nt, ND, no rebound/guarding/masses

GU: NEFG, normal appearing cervix, vaginal mucosa; anteverted, 7 week size uterus; no CMT; no uterine or adnexal masses or tenderness

Ext: WWP

Skin: Normal turgor, no hyperpigmentation

REVIEW: INFERTILITY

What is the definition of infertility?

- Failure to achieve pregnancy within **12 months** of unprotected intercourse or donor insemination in **women under 35**
- OR **6 months for women over 35**

- **Secondary infertility** is infertility (as defined above) after a previous pregnancy or previous ability to carry a pregnancy to a live birth (WHO)

Epidemiology

- **15%** of couples
- Prevalence of 2° infertility varies by region and age
  - United States: < 6%
  - **Increases** with **increasing age**: 2.6% for 20-24yo, 27.1% for 40-44yo.

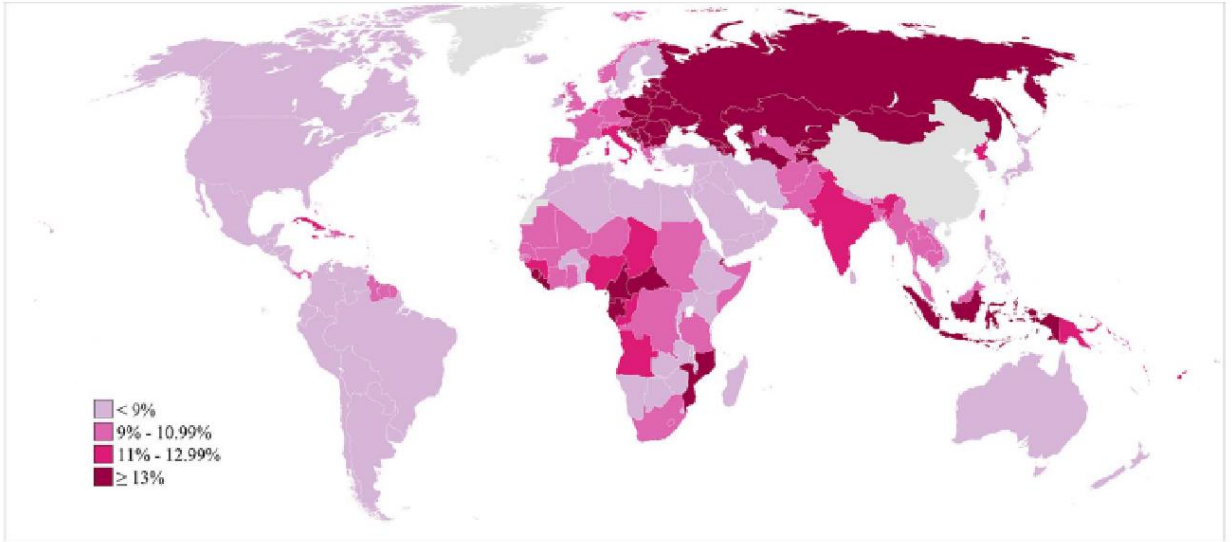


Figure 4. Prevalence of secondary infertility among women who have had a live birth and seek another, in 2010. Infertility prevalence is indexed on the female partner; age-standardized prevalence among women aged 20–44 y is shown here.
doi:10.1371/journal.pmed.1001356.g004

Mascarenhas, 2012

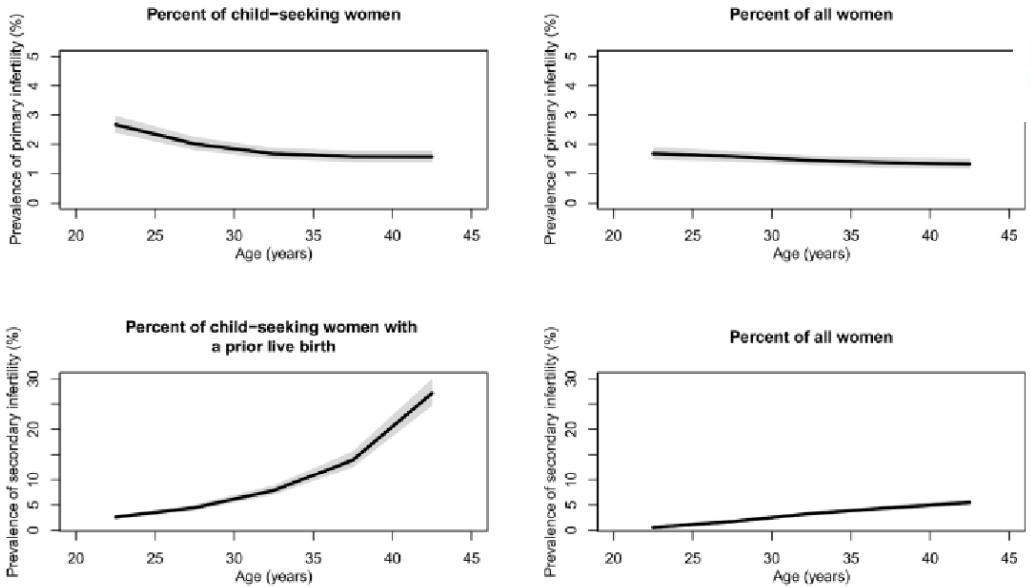
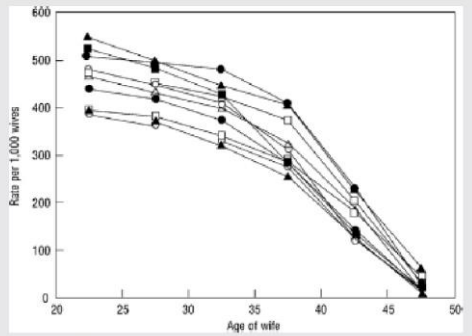


Figure 1. Global prevalence of primary and secondary infertility in 2010, by the female partner's age. Infertility is calculated as the percent of women who seek a child and as the percent of all women of reproductive age. The solid line represents the posterior mean, and the shaded area the 95% uncertainty interval.
doi:10.1371/journal.pmed.1001356.g001

Mascarenhas, 2012

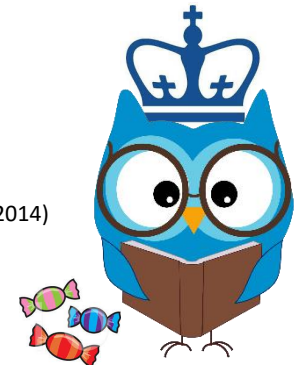
FIGURE 1



Marital fertility rates by 5-year age groups. The ten populations (in descending order at age 20–24 years) are Hutterites, marriages in 1921–1930 (▲); Geneva bourgeoisie, husbands born 1600–1649 (■); Canada, marriages in 1700–1730 (●); Normandy marriages in 1760–1790 (○); Hutterites, marriages before 1921 (□); Tunis, marriages of Europeans 1840–1859 (△); Normandy, marriages in 1674–1742 (●); Norway, marriages in 1874–1876 (□); Iran, village marriages in 1940–1950 (▲); Geneva bourgeoisie, husbands born before 1600 (○). From Menken J, Trussell J, Larsen U. Age and fertility. Science 1986;233:1389–94. Reprinted with permission from AAAS.

Practice Committee. Committee Opinion No. 589. Fertil Steril 2014.

ASRM CO 589 (2014)



REVIEW: ETIOLOGIES OF SECONDARY INFERTILITY

- Female factor
  - Ovulatory dysfunction
  - Tubal factor
  - Uterine factor
- Male factor
  - 40-50% of couples
- Female and male factors
- Unexplained

Flashback to: "Infertility Evaluation" AuduBon-Bon

REVIEW: EVALUATION

See "Infertility Evaluation" Audubon-bon

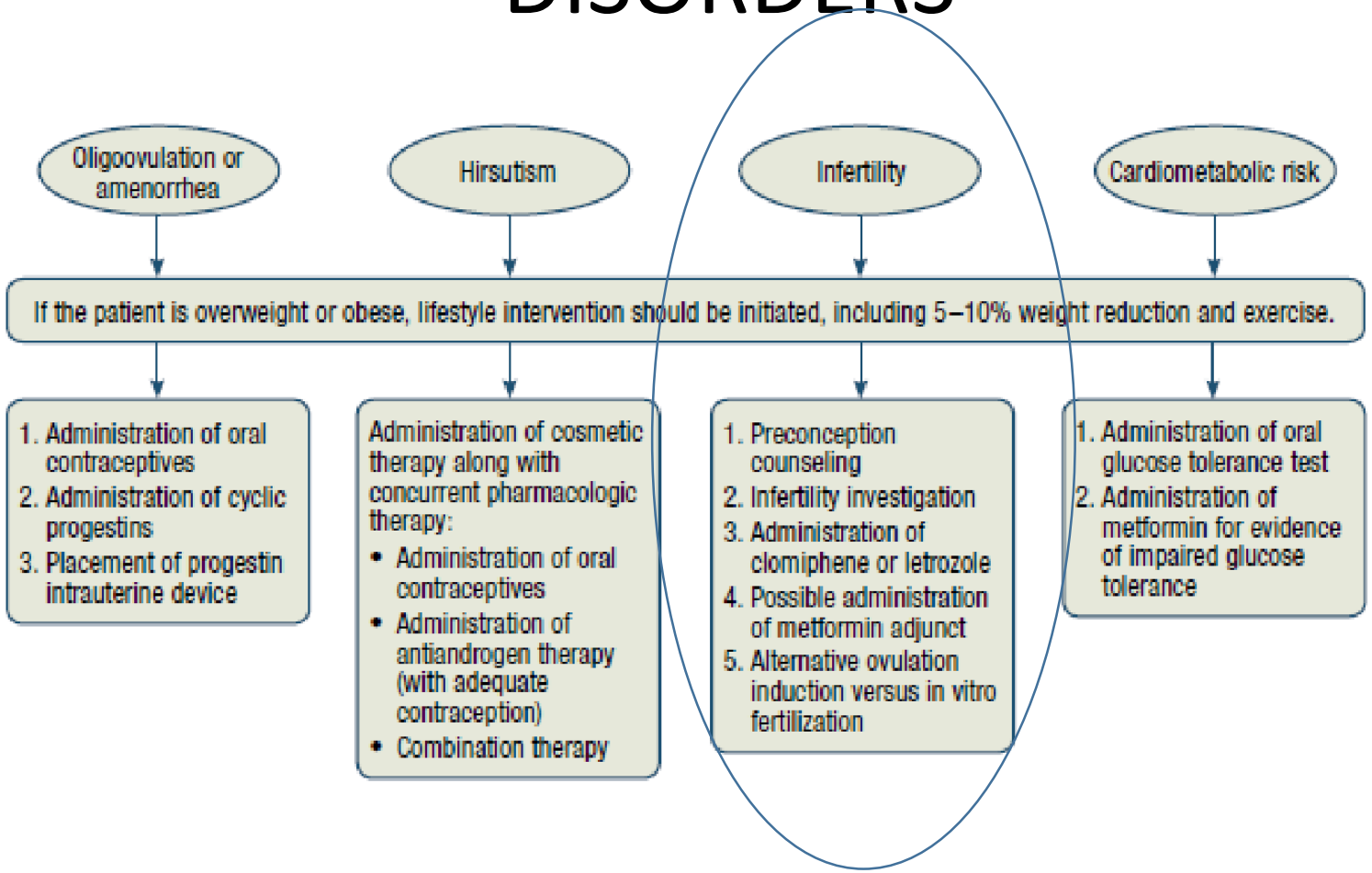
Table 1. Basic Infertility Evaluation

Female		
History		
Physical		
Prepregnancy evaluation*		
Additional evaluation for etiology of infertility	Diminished ovarian reserve	• Antimüllerian hormone or basal follicle-stimulating hormone plus estradiol • Transvaginal ultrasonography with antral follicle count
	Ovulatory dysfunction	Ovulatory function test (eg, serum progesterone measurement)
	Tubal factor	• Hysterosalpingography • Hysterosalpingo-contrast sonography
	Uterine factor	• Transvaginal ultrasonography • Sonohysterography • Hysteroscopy • Hysterosalpingography
Male		
History		
Semen analysis		

*See the following document for guidance on prepregnancy evaluation: Prepregnancy counseling. ACOG Committee Opinion No. 762. American College of Obstetricians and Gynecologists. Obstet Gynecol 2019;133:e78–89.

ACOG, CO 781, 2019

MANAGEMENT: INFERTILITY DUE TO OVULATORY DISORDERS



ACOG, Clin updates: PCOS, 2016

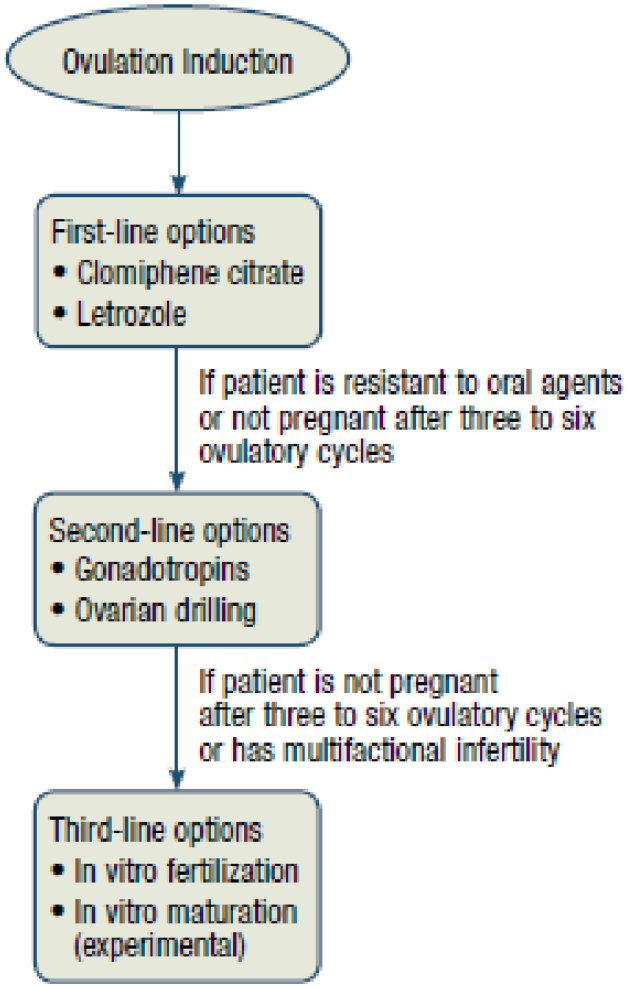
MANAGEMENT: INFERTILITY continued…

If weight reduction is not effective in restoring normal ovulatory function or if the patient is unable to lose weight despite adequate counseling and attempts, ovulation induction should be considered

5-10% of body weight reduction in obese women with PCOS can restore normal ovulatory function 55-100% of women within 6 months

Letrozole (preferred):
-started on day 3 x 5 days

Clomiphene:
-started on day 5 x 5 days



ACOG, Clin updates: PCOS, 2016

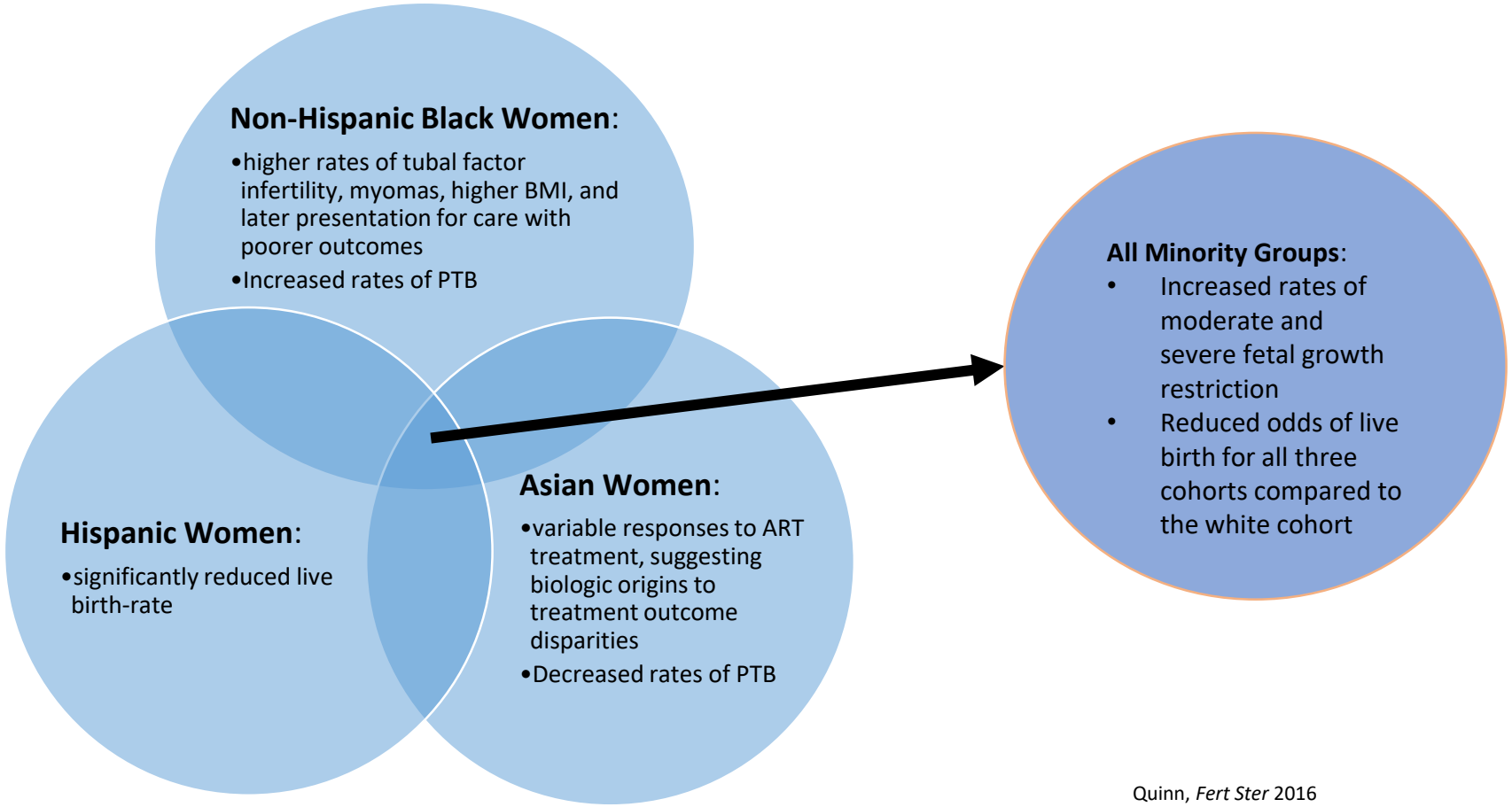
MANAGEMENT: OTHER COMMON CAUSES OF INFERTILITY

Etiology		Treatment

Tubal factor	*Proximal occlusion*
	Distal occlusion
	Hydrosalpinx
		• IVF first-line for all
		  • Fimbrioplasty/neosalpingostomy (distal): inferior to IVF; rates highly variable depending on extent of tubal damage
		  • Salpingectomy (hydrosalpinx): preferred for hydrosalpinges, improved rates of ongoing pregnancies if done prior to IVF (OR 2.14)

Endometriosis	*Stage I-IV*	• Surgical resection of disease, endometrioma • Ovulation induction, IUI, ART pending stage of endometriosis, age, response to interventions
Uterine factor	*Fibroids* *Septa/congenital anomalies* *Synechiae* *Polyps*	• Resect cavity-distorting fibroids (submucosal/large intramural) • Resect septa, adhesiolysis • Resect polyps (pregnancy rate 63% w/ polypectomy + IUI vs 28% w/ IUI only)
Male factor		Refer to your local REI

SOCIAL DETERMINANTS OF HEALTH



Quinn, *Fert Ster* 2016

Significant disparities exist in access to infertility treatment, etiologies of infertility, and outcomes of infertility treatment between racial and ethnic groups

EPIC .PHRASE

.BBonInfertilityTreatment

Description: General counseling on infertility treatment options

The patient was counseled in detail on management options for infertility. We discussed that treatment will be dependent on the etiology of her infertility after appropriate work-up. In general, we recommend optimization of health status, including 5-10% weight reduction in women with elevated BMI, exercise, and smoking cessation.

***For women with PCOS, we discussed options available, including ovulation induction with letrozole/clomiphene, gonadotropin administration, and assisted reproductive technology.

***For women with uterine polyps/septum(a), we discussed surgical optimization (i.e. polypectomy) prior further treatment.

***For women with endometriosis, we discussed management options, including ovulation induction, gonadotropin administration, ART, and surgical evaluation, including cystectomy for endometriomas.

***For women with tubal factor infertility, we discussed management options, namely ART for first-line intervention. **For women with hydrosalpinx diagnosed on imaging studies, we recommend salpingectomy prior to initiation of ART.

***For women with male factor infertility, we discussed management options and further evaluation by infertility specialists.

The patient was referred to Reproductive Endocrinology and Infertility Clinic for further evaluation, assessment, and treatment.

CODING/BILLING

ICD-10 Codes:

- N97.9 Female Infertility
- N97.0 Female infertility associated with anovulation
  - E28.2 PCOS
- N97.1 Female infertility of tubal origin
  - N701 Hydrosalpinx
- N97.2 Female infertility of uterine origin
- N80.9 Endometriosis
- Z46.9 Male infertility, unspecified

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