Published in final edited form as:

Contraception. 2010 September ; 82(3): 281–285. doi:10.1016/j.contraception.2010.02.006.

The effect of patient gynecologic history on clinician contraceptive counseling

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Abstract

Background—Contraceptive providers have an important influence on women's selection of contraception. Previous studies suggest that clinicians inappropriately limit use of intrauterine contraception (IUC). This study investigated the influence of patients' gynecologic histories on recommendations for IUC and other methods of contraception.

Study Design—Videos of standardized patients varying by history of pelvic inflammatory disease (PID) and parity were shown to clinicians at meetings of national medical societies. Participants indicated their contraceptive recommendations for the patient and whether they would have concerns were the patient to use IUC.

Results—Five hundred-twenty-four providers viewed one video of a standardized patient and completed the survey. Gynecologic history was significantly associated with recommendations for the contraceptive ring, contraceptive patch, and copper IUC. Many clinicians indicated that they had concerns about the use of IUC with respect to risks such as PID, infertility and ectopic pregnancy. Concerns about infertility and pain with use of IUC were related to gynecologic history.

Conclusions—Patient gynecologic characteristics affect recommendations for some reversible contraceptive methods. Clinicians continue to have concerns about IUC use despite evidence supporting its safety.

Keywords

Contraception; Intrauterine Contraception; Pelvic Inflammatory Disease; Clinical Recommendations; Standardized Patients

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1. Introduction

Women in the United States who desire reversible contraception have options ranging from taking a daily oral contraceptive pill to having a 10-year copper intrauterine device placed, with many other options in-between. The choice of an appropriate method for each individual depends on her personal preferences regarding efficacy, ease of administration and side effects. Family planning clinicians play an important role in an individual's decision through informing and guiding her decision-making process as well as screening patients for any medical contraindications for specific methods [1].

Several recent studies have documented that, in addition to the consideration of evidence-based medical contraindications, many family planning clinicians are concerned about the use of intrauterine contraception (IUC) among women who are nulliparous or have a history of sexually transmitted infections (STIs), including pelvic inflammatory disease (PID), despite medical evidence indicating these concerns are unfounded [2, 3]. Insertion of IUC requires a procedure by a health care provider, so any bias against these methods in women with specific gynecologic histories has the potential to dramatically affect the use and acceptability of this method. This is especially concerning given the low rate of use of highly effective contraceptive methods such as IUC in the United States [4]. Clinicians inappropriately limiting the use of these methods may be hampering public health efforts to decrease the high rate of undesired pregnancies in this country [5].

Previous studies investigating the effect of patient gynecologic history on clinician recommendations have been either limited in geography or performed prior to the approval of the levonorgestrel IUC in the United States. In addition, these studies have been conducted using surveys, and therefore may not accurately represent clinician recommendations in clinical practice. In order to build upon these previous studies, we conducted a randomized trial in which clinicians were shown videos of standardized patients varying by gynecologic history. We also explored whether these gynecologic factors influenced recommendations for reversible contraceptive methods other than the IUC, as this had not previously been studied.

2. Materials and methods

2.1. Study design

As part of a study investigating racial/ethnic and socioeconomic disparities in clinician recommendations for contraceptive methods, we produced 18 videos, which each lasted approximately five minutes, portraying a standardized patient presenting to her health care provider requesting advice about contraception, with the patient varying by gynecologic history, race/ethnicity, and socioeconomic status (SES) in a factorial design. The gynecologic histories which were presented included a woman with a history of a vaginal delivery and no history of sexually transmitted infections (STIs); a woman with a history of a vaginal delivery and history of PID; and a nulliparous woman with no history of STIs. The woman with the history of PID had had this diagnosis five years before the time of the visit shown in the video, and had had a subsequent vaginal delivery. Each video consisted of one

standardized patient performing a monologue which included information about her medical and gynecologic history. In addition, she indicated that she was in a monogamous relationship and that she “did not want to get pregnant for at least a few years”. We ensured that the videos were standardized with respect to other factors by having five physicians view all 18 videos and attest to their equivalence.

Using these videos, we performed a randomized controlled trial of clinician recommendations for contraception at four regional and national meetings of the American Academy of Family Physicians and the American College of Obstetrics and Gynecology between October 2007 and May 2008. We recruited a convenience sample of practicing health care providers in the exhibit halls of these meetings, with each clinician watching one video, selected using computer generated randomly permuted blocks of 18.

Participants then completed a survey about their contraceptive recommendations for the patient shown in the video, rating each of 6 contraceptive methods (oral contraceptive pill, contraceptive patch, contraceptive ring, contraceptive injection, copper IUC and levonorgestrel IUC) on a scale of -3 to +3, ranging from “Strongly Recommend Against” to “Strongly Recommend For”. The subjects were informed during the survey that the patient’s health care insurance covered all contraceptive methods. Clinicians also answered questions about whether or not they would have specific concerns, such as pain, bleeding, or elevated risk of PID, if the patient depicted in the video were to choose to use IUC. Unlike the questions regarding recommendations each method, the questions regarding concerns related to use of IUC did not differentiate between the levonorgestrel and copper IUC. Characteristics of the clinicians, including gender, age, self-identified race/ethnicity, and practice type, were collected. Clinicians were not aware of our interest in investigating differences by patient characteristics or the fact that videos of patients with different gynecologic histories were shown to different clinicians.

2.2. Statistical analysis

For each of the six contraceptive methods, we defined clinician recommendation for use as a rating of -1 on the scale of -3 to +3. We first performed bivariate analysis of clinician recommendations using chi-squared tests or Fisher’s exact tests as appropriate. In addition, we used multivariate logistic regression to estimate the effects of patient gynecologic history on these outcomes, adjusting for clinician characteristics as well as patient race/ethnicity and SES. Prespecified analyses included analysis of interactions between the patient characteristics of race/ethnicity, SES, and gynecologic history in order to test our prior hypothesis that the effects of patient gynecologic history on provider recommendations might be modified by patient race/ethnicity and/or SES. For the multivariate model, we used backwards selection to eliminate covariates with p values >0.1. In all regression analyses, parous women with no history of STIs were the reference group. Analysis of the relationship of gynecologic history with concern for IUC risk factors were conducted in the same manner. All analyses were performed using Stata Version 9.2 (Stata Corp, College Station TX).

2.3. Human subjects approval

The Committee of Human Research at the University of California, San Francisco approved this study, and participants provided informed consent prior to participation by indicating consent on a computerized consent form.

3. Results

3.1. Subject

We enrolled 524 clinicians into our study, and their characteristics are listed in Table 1. The majority of the subjects were MDs; 60% had a specialty of obstetrics and gynecology, and approximately 40% had the specialty of family medicine. The gynecologic profiles were successfully randomized across all clinician characteristics.

3.2. Recommendations for contraceptive methods

The frequency of recommending each method is displayed in Fig. 1. The oral contraceptive pill, contraceptive ring, and levonorgestrel IUC were the three most highly ranked methods for all gynecologic profiles. The copper IUC was rated fourth for women with a history of a vaginal delivery and no history of STIs, but last for all other women. There was significant variability in recommendations by gynecologic profile for both the contraceptive ring ($p=0.01$) and the copper IUC ($p=0.03$). The multivariate results are presented in Table 2. Compared to parous women with no history of STIs, nulliparous women are significantly more likely to have the contraceptive ring recommended, with a trend in the same direction for parous women with a history of PID. Parous women with a history of PID were also more likely to have the contraceptive pill recommended to them, while nulliparous women were less likely to have the copper IUC recommended.

We found statistically significant modification of the effects of patient gynecologic history on recommendation of the levonorgestrel IUC by patient race/ethnicity and SES. We therefore calculated odds ratios for the association between recommendations for this method and gynecologic history for each SES and race/ethnicity combination; these odds ratios are not included in the table. Gynecologic characteristics differentially affected recommendations for this method among high SES Black and Latina women and low SES Whites. Among high SES Black patients, providers were less likely to recommend the levonorgestrel IUC to nulliparous women than to parous women (AOR 0.2, 95% CI 0.08-0.6), and there was also weak evidence that they were less likely to recommend it to parous women with a history of PID (AOR 0.3, 95% CI 0.1-1.0). Similarly, among high SES Latinas, providers were less likely to recommend the levonorgestrel IUC to parous women with a history of PID (OR 0.3, 0.1-0.8) than to parous women with no history of STI, but recommended it at comparable rates to nulliparous women (OR 0.6, 95% CI 0.2-1.6). In contrast, among low SES White women, providers were *more* likely to recommend the levonorgestrel IUC to parous women with a history of PID (AOR 3.0, 95% CI 1.1-7.7) than to parous women with no history of STI. We also found a trend in the same direction for nulliparous women (AOR 2.2, 95% CI 0.9-5.6). Gynecologic characteristics were not associated with recommendations for the levonorgestrel IUC among high SES Whites and low SES Black and Latina women.

3.3. Gynecologic characteristics and concern for side effects of IUC

The percentage of clinicians reporting concern for specific side effects are presented in Fig. 2, stratified by the gynecologic history of that patient. The most frequent concern was risk of PID with use of the IUC (46% of all clinicians), followed by risk of bleeding side effects (34%) and risk of perforation (31%). Twenty-eight percent and 18% of clinicians expressed concern about risk of ectopic pregnancy and infertility, respectively.

In both bivariate and multivariate analyses, there were significant differences in concern for pain and infertility by gynecologic history. Clinicians who viewed videos of nulliparous patients were significantly more likely to be concerned about both pain and infertility (AOR 1.8 [95% CI 1.1-2.8] and AOR 1.9 [95% CI 1.0-3.4,] respectively). Infertility was also a more frequent concern in those who viewed videos of women with a history of PID (AOR 2.0, 95% CI 1.1-3.8). While having a history of PID was more likely in bivariate analysis to be associated with concerns for PID with IUC, this was not significant in multivariate analysis (AOR 1.6, 95% CI 1.0-2.6). Gynecologic characteristics did not influence clinicians' concern about the risk of ectopic pregnancy, perforation with insertion, expulsion of IUC, bleeding problems, or dysmenorrhea.

4. Discussion

Our results indicate that patient gynecologic characteristics affect clinician recommendations for the copper IUC, with nulliparous women being less likely to have this method recommended than parous women, but no relationship between having a history of PID and recommendations for this method. While our study does not provide definitive information about clinicians' reasons for these differences in recommendations, the concerns expressed by clinicians about IUC provide some insight. The increased likelihood of recommending the copper IUC to parous women compared to nulliparous women may reflect the concerns about pain and infertility among clinicians who viewed videos of nulliparous women. This is supported by data showing that nulliparous women are more likely to experience side effects with the copper IUC [6], as well as surveys showing that providers are concerned about recommending IUC to nulliparous women [2,3].

In contrast to previous studies, we did not find an effect of history of PID on recommendations for the copper IUC. This difference may be due to increased dissemination of data showing no increased risk of PID in users of IUC [7,8], suggesting that contraceptive providers are improving their use of evidence over time. Alternatively, this difference in results could stem from our use of videos of standardized patients, rather than a simple survey. As videos represent a closer approximation to actual clinic practice, this interpretation would indicate that clinicians may not be limiting IUC use among women with history of STIs to the extent previously believed.

In assessing recommendations for the levonorgestrel IUC, we found evidence that gynecologic history is differentially perceived by providers according to patient race/ethnicity and SES. History of PID and nulliparity reduced the likelihood that providers would recommend this method to high SES Black and Latina but not high SES White women. As a history of PID or nulliparity are often perceived as risks factors for

complications from IUC, this may be indicative of increased concern about the impact of these perceived risks specifically among high SES minority women. In contrast, among low SES White women, providers were *more* likely to recommend the levonogestrel IUC to patients with a history of PID than to those without such a history. This is more difficult to interpret, but does support the impact of patient demographic characteristics on clinician perceptions.

Recommendations for the oral contraceptive pill and contraceptive ring were both influenced by patient gynecologic history. The finding that providers are more likely to recommend oral contraceptives to women with a history of PID could be related to research which suggests that this method may be protective against PID [9]. While it would be anticipated, based on the likely mechanisms by which this protection could occur, that all progestin-containing methods may have this protective effect, the lack of research supporting this effect for other methods may encourage clinicians to favor oral contraceptives in this situation. The strong evidence that clinicians are more likely to recommend the contraceptive ring to nulliparous women was unexpected. In fact, we would have hypothesized an opposite effect, as it is reasonable to suggest that women who have previously had a vaginal delivery may be more comfortable with the intravaginal administration of this method.

Despite our findings showing that gynecologic history influences recommendations for specific methods, it is important to note that, overall, our results indicate that patient parity and history of PID do not influence recommendations for most contraceptive methods. For nulliparous women and parous women with a history of PID, the relative frequency of recommending each method was the same, with the contraceptive pill being the most frequently recommended method, followed by the contraceptive ring, levonorgestrel IUC, contraceptive patch, contraceptive injection, and copper IUC. For parous women with no history of STIs, the only difference in this order was that the copper IUC was more likely to be recommended than the contraceptive patch or the contraceptive injection. Overall, this suggests that women are likely to receive relatively uniform counseling methods regardless of their gynecologic history.

An additional finding of our study which deserves notice is the frequency of clinician concerns about intrauterine contraception, regardless of gynecologic characteristics. Concerns about pain, bleeding, and perforation remain common. In addition, while infertility and ectopic pregnancy were less likely to be concerns, with approximately 20% and 30% of clinicians expressing these concerns, respectively, this is a high number given the strong evidence that there is in fact no association between IUC use and these outcomes [7,10].

Limitations of this study include the use of standardized patients in our videos. While we believe this methodology is more representative of a clinical encounter than a survey, it no doubt imperfectly reflects what occurs in actual clinical practice. In addition, our use of a convenience sample limits the generalizability of our findings. Specifically, clinicians attending national medical meetings and willing to participate in research may be more aware of current evidence; this could at least partly explain our findings that a history of PID did not influence clinician recommendations for the copper IUD. A final limitation is that

we did not differentiate between the copper IUC and the levonorgestrel IUC when we inquired about clinician concerns for use of the IUC for their particular patient. This limits our ability to understand the effects of gynecologic characteristics on concerns for each individual IUC.

Overall, our results are in agreement with previous research indicating that contraceptive providers have inappropriate concerns about the use of intrauterine contraception and may limit the use of copper IUC, specifically among nulliparous women. Continued efforts to disseminate evidence about IUC use, including contraindications and side effect profiles, may further increase clinicians' willingness to recommend this highly effective method.

Acknowledgments

This project was supported by an anonymous foundation. This project was also supported by NIH/NCRR/OD UCSF-CTSI Grant Number KL2 RR024130. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NIH. The authors had no writing assistance for this manuscript. The authors would like to thank Allison Perencevich, BA for assistance with data collection.

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Figure 1.
Recommendations for Contraception by Gynecologic Characteristics

Figure 2.
Concerns about IUC, by Gynecologic History

Table 1

Characteristics of participants, stratified by standardized patient

	All subjects	Parous with no history of STIs n=173	Nulli-parous n=169	History of PID n= 182	p value
Clinician characteristics					
Male sex (%)	53.6	52.0	57.1	51.5	0.50
Race/ethnicity (%)					
White	76.9	84.4	73.6	72.8	0.06
Black	7.8	2.3	9.9	11.2	
Latina	3.8	3.5	3.3	4.7	
Asian	9.2	6.9	11.0	9.5	
Other	2.3	2.9	2.2	1.8	
Age (mean/SD)	45.9 (10.5)	45.5 (10.9)	46.3 (10.0)	45.8 (10.6)	0.76
Specialty (%)					
Ob/Gyn	59.0	59.5	59.3	58.0	0.82
Family medicine	38.7	39.3	37.9	39.1	
Other	2.3	1.2	2.8	3.0	
Does IUC insertions (%)	74.1	76.9	70.3	75.2	0.34
Professional degree (%)					
MD/DO	95.6	97.1	95.1	95.9	0.61
Nurse practitioner or physician assistant	3.0	2.9	5.9	4.1	
Region					0.44
Midwest	31.7	37.6	29.1	28.4	
South	30.2	29.5	32.4	28.4	
West	19.5	16.2	19.8	22.5	
Northeast	18.7	16.8	18.7	20.7	
Board certified (%)	92.0	93.1	91.2	91.7	0.80
Accepts medicaid (%)	81.3	82.7	83.0	78.1	0.43
Frequency of prescribing contraception (%)					0.24
Never or rarely	5.9	5.2	8.2	4.1	
Occasionally	16.2	12.7	18.1	17.8	

	All subjects	Parous with no history of STIs n=173	Nulli-parous n=169	History of PID n= 182	p value
Frequently	77.9	82.1	73.6	78.1	
Practice type (%)					0.83
Academic	24.6	25.4	24.2	24.3	
Private	54.4	52.0	57.1	53.9	
HMO	7.3	8.1	7.7	5.9	
Public/Community health clinic or Family Planning clinic	13.7	14.5	16.0	11.0	

Table 2

Effects of patient gynecologic history on contraceptive recommendations*

	Nulliparous with no history of STI				Parous with history of PID			
	Unadjusted OR	p value	Adjusted OR	P value	Unadjusted OR	p value	Adjusted OR	p value
Oral contraceptives	1.4 (0.8-2.6)	0.26	1.7 (0.9-3.3)	0.11	1.8 (0.9-3.4)	0.09	2.2 (1.1-4.5)	0.03
Contraceptive ring	2.2 (1.3-3.7)	0.003	3.0 (1.7-5.5)	<0.001	1.4 (0.9-2.3)	0.17	1.7 (1.0-3.0)	0.05
Contraceptive patch	1.3 (0.9-2.0)	0.20	1.3 (0.8-2.0)	0.27	1.3 (0.9-2.0)	0.23	1.3 (0.8-2.0)	0.30
Contraceptive injection	1.3 (0.9-2.1)	0.12	1.4 (0.9-2.1)	0.13	1.3 (0.9-2.0)	0.20	1.3 (0.8-2.0)	0.23
Copper IUC	0.6 (0.4-0.9)	0.008	0.6 (0.4-0.9)	0.02	0.8 (0.5-1.2)	0.19	0.8 (0.5-1.2)	0.28

* Reference group is parous women with no history of STIs.