Approaches Used to Improve Adherence to Oral Contraceptives

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Abstract

Objectives: The objective of this review the approaches for improving oral contraceptives (OCs) adherence.

Methods: The search strategy involved the use of the following data bases: Cochrane Library, Pubmed, hinari, a Pop Line, Scopus, Science direct, the Cochrane register of Controlled Trials. Types of study are original Research studies, RCTs, systematic reviews, full text articles.

Results: Adherence is a shared responsibility of patients, clinicians, and manufacturers; the patient and clinician are the focal points for these efforts. Counseling must be individualized, which requires knowledge of factors that predict adherence and understanding of the patient's decision making process as it relates to medications.

Conclusion: Improving adherence and preventing early discontinuations is a shared responsibility of OCs users, health care providers, and OCs manufacturers. Manufacturers should recognize that the provision of written materials that are both informative and easy to understand can improve patient compliance. Continued improvements in OCs formulations are important in reducing unwanted side effects. However, our findings suggest that providers are the focal point for helping women to become more successful OCs users.

Key words: *Oral contraceptives, Adherence, Discontinuations, Oral contraceptives and counseling*

Introduction

Adherence with medication is a complex and intriguing behavioral issue which has been the focus of much debate. Multiple methods have been studied to measure adherence, but no single measure can be considered the gold standard for all types of adherence research. In addition, multiple interventions are required to improve adherence with acute as well as chronic medication regimens. No simple, single adherence intervention is useful by itself.[1, 2] Therefore, medication regimen adherence continues to be a major problem, because many reports of adherence lack precision, and interventions to improve adherence are difficult to implement. Large disparities have been reported in the extent of non-adherent behavior-reported compliance rates vary from 19% to 100%[3, 4], In addition, the definition and measurement of adherence often vary from study to study, making generalizability difficult[3]. Definitions of compliance range from the percentage of tablets consumed in a defined time span to classifications such as errors of omission, dosage, timing, or purpose[5].

Medication regimen compliance is often described as having a single dimension when several distinct types of noncompliant behavior exist: (a) the patient may fail to take any medication, (b) the patient may discontinue therapy prematurely, and (c) the patient may continue to take the medication but deviate from the prescribed

regimen [6]. These types of behavior should be clearly delineated when referring to medication regimen adherence or compliance. For example, two separate studies may report that medication regimen compliance was 50%. However, 50% compliance in the first study may indicate that one half of the patients stopped therapy, whereas in the second study it may indicate that patients consumed an average of 50% of the total doses prescribed over a specified time [7]. Non-adherence with medication is not a new issue. Often patients do not disclose their medication taking behavior. Equally prescribers may be unaware of their patients' medication taking practices. Non-adherence with medication can be classified as intentional, often related to the need to avoid drug-related adverse effects [8, 9], or unintentional related to cognitive or visionary impairment, poor cognition [10], or due to poor educational achievement or forgetfulness. Unlikely, few large studies of OCs adherence have been conducted in the general population. The existing literature on contraceptive use focuses on adolescents, and the large majority of these studies involve small numbers of subjects that are not able to differentiate between a numbers of risk factors. The objectives of this review are to, (A) Identify factors affecting adherence to OCs, (B) Identify impact of non-adherence to OCs, and the approaches for improving OCs adherence.

Materials and Method

The search strategy involved the use of the following data bases: Cochrane Library, Pubmed, hinari, a Pop Line, Scopus, Science direct, the Cochrane register of Controlled Trials. Types of study are original Research studies, RCTs, systematic reviews, full text articles. In total 60 reports were selected for in-depth evaluation and, of these 25 research studies emerged that examined adherence with OCs. References and articles were selected from a 10- year period from 2003 to 2013 as it was shown the most relevant studies pertinent to the subject area would be located within this period and would reflect the currency of the available literature.

Results and Discussion

Approaches used to improve adherence to OCs

Several strategies to improve OCs use may prove fruitful the clinician serves as the focal point for these, because he/ she must assess each patient, decide which areas are appropriate for emphasis, and ensure that the patient understands information that serves as the basis for proper OC use [11]

A. Health care providers [4, 6, 10]

1. Individually adjust contraceptive choice; help each woman think through the choice according to background and individual needs and concerns.

2. Stress importance of daily routine for pill taking.

3. Discuss the transient nature of most OC side effects in new users, especially spotting and bleeding.

4. Dispel OC myths and misinformation; discuss noncontraceptive health benefits of OCs.

5. Demonstrate correct use of specific OC package prescribed.

6. Provide easy-to-understand instructions in both oral and written forms on proper use and dealing with missed pills.

7. Suggest backup contraceptive method if she missed one or more pill.

8. Provide means for patient to get additional information about OCs and their use if she has questions later.

9. Use follow-up contact to look for signs of noncompliance; for example, calls about spotting should be a flag for inconsistent use and an opportunity to review instructions.

B. OCs users [11]:

1. Establish a regular time to take OC, preferably as part of daily routine such as brushing teeth.

2. Carefully read literature that accompanies pill package.

3. Know what to do if pills are missed.

Discussion

The choice of currently available contraceptive methods has increased considerably in recent years, offering women of reproductive age a variety of different methods depending on their needs and lifestyle.

The contraceptive pill is the most widely used method of contraception , with 65% being pill users, which is consistent with data of a comprehensive survey conducted among 12,138 randomly selected women from five countries [12]. The efficacy of oral contraceptives, however, depends on women consistent and proper use. Women who use oral contraceptives inconsistently are almost three times more likely to experience an unintended pregnancy compared with women who take their oral contraceptives consistently [13]. As in one study, it has been recognized that contraceptive effectiveness is not simply a matter of technology but is also a matter of the influence of psychological and many other factors to which more attention should be paid to minimize non-adherence-related problems [14]. In another study, side effects and menstrual disturbances were also the most common reason for dissatisfaction leading women to discontinue OCs. However, the overall dissatisfaction rate leading to OCs discontinuation was lower than for all other medical methods of contraception. In a large prospective study, Rosenberg and Waugh [15] showed that 28 out of 100 OCs users discontinued the method within the first 6 months of use, with probabilities of discontinuation dropping sharply after the first three months of use. Almost half of OCs users (46%) in that study stopped using their method because of side effects or doctor recommendations, while 14% discontinued because they considered the method too hard to use, too expensive or were concerned with hormones [16]. all reasons that are likely to be categorized as dissatisfaction. Concerning these results, there is believe that a broader understanding of women's concerns and experience using contraception could help health care providers redesign counseling strategies to improve contraceptive continuation. Further research in particular is needed to explore the factors that might influence contraceptive dissatisfaction ultimately leading to discontinuation. These factors include women's social and demographic characteristics, shown to be associated with contraceptive discontinuation for method related reasons in the United States [17, 18]. Longitudinal studies should also explore the impact of women's changing life circumstances on the concurrent dynamics of contraceptive use [9]. In some study in this review, the decision-making process in choosing a contraceptive method, including the role of the health care provider [19, 20], should be better understood; the reasons for initiating use of a contraceptive method may affect the user's long-term experience and satisfaction with the method. IN one study which concern about depressed mood, psychological stress and perceived weight changes were independent predictors of OCs discontinuation among young minority women in the study. Other researchers have reported on associations between perceived weight side effects, in particular, weight gain, and OCs misuse [20, 21, 22] . The findings offer further support that perceptions of weight side effects remain a persistent barrier to contraceptive continuation. It is unclear from these data why women with depressed mood or psychological stress are more likely to discontinue OCs. In this review some result found that existing theories on psychiatric mechanisms related to pill misuse more generally suggest that women with adverse psychological conditions may lack insight into their psychological distress and its impact on daily functioning, including pill taking [3]. They may have diminished perceptions of benefits and threats of a contraceptive treatment and susceptibility to pregnancy[11] or limited capacities for risk assessment, planning and social learning[23-27] in this study they conclude that all of these cognitive processes could interfere with a woman's contraceptive behavior and ability to make health decisions but require further investigation in regards to OCs use and depression and stress, also psychological conditions may contribute to or exacerbate perceptions of negative OCs related symptoms. Adherence rates may be improved by method-specific counseling about side effects that a user might expect, and, perhaps more importantly, targeted method selection informed by the patient's level of tolerance for certain kinds of side effects. Counseling that integrates consideration of the "method–user–interaction" [12] may be useful in matching patients with the contraceptive method that best fits their current needs and provides ongoing satisfaction. In this review, very few studies examining the effect of enhanced counseling have shown such a benefit [28-33]. A recent Cochrane review examining strategies to improve adherence and acceptability of hormonal methods found only 1 out of 6 trials showing an effect of counseling on contraceptive continuation [34]. However, in this review they also conclude that published trials are limited both in scope and quality; therefore, more research involving well-designed interventions is needed to understand the potential role of the clinician in reducing

method dissatisfaction and improving contraceptive continuation [35]. The lack of knowledge about contraception between some providers has the potential effect on ability to provide quality contraceptive care to patients, which could have an impact on their ability to prevent unintended pregnancies. As an example, 29% of providers who were unaware of the WHO recommendation to administer emergency contraception up to 120 h after intercourse [36]. The finding that gaps in knowledge about contraception suggests the need for expanded efforts at education targeting health providers, attention to continuing medical education (CME) with emphasis on evidence-based resources, such as the WHO recommendations [37], has the potential to improve knowledge.

Conclusion

Improving adherence and preventing early discontinuations is a shared responsibility of OCs users, health care providers, and OCs manufacturers. Manufacturers should recognize that the provision of written materials that are both informative and easy to understand can improve patient compliance. Continued improvements in OCs formulations are important in reducing unwanted side effects. However, our findings suggest that providers are the focal point for helping women to become more successful OCs users. They must assure adequate initial counseling for patients about the correct use of OCs. To improve adherence, the prescriber should help a woman establish a regular routine for taking her OCs, assure that she properly understands use instructions (including missed pill instructions), and knows where to get information in the future if problems or questions should arise. When OCs use is initiated, providers should emphasize that side effects are expected, though most will be transient. Since the occurrence of side effects is associated with an increased likelihood of unintended pregnancy, providers also need to emphasize the need to continue to take OCs reliably even if side effects do occur. Improving adherence through these measures will reduce the incidence of side effects and unintended pregnancy.

Conflicts of Interest: The authors have no conflicts of interest to declare.

Funding information: No financial support for this review that could have influenced its outcome.

Ethical Clearance: Our present article is a review article. There is no need to get ethical clearance.

References

1. Branden PS. Contraceptive choice and patient compliance: the health care provider's challenge. Journal of Nurse-Midwifery. 1998;43(6):471-82.
2. Rosenberg MJ, Burnhill MS, Waugh MS, Grimes DA, Hillard PJ. Compliance and oral contraceptives: a review. Contraception. 1995;52(3):137-41.
3. Haynes RB, Wang E, da Mota Gomes M. A critical review of interventions to improve compliance with prescribed medications. Patient education and counseling. 1987;10(2):155-66.
4. Haynes RB, McKibbon KA, Kanani R. Systematic review of randomised trials of interventions to assist patients to follow prescriptions for medications. Lancet. 1996;348(9024):383.
5. Greenberg RN. Overview of patient compliance with medication dosing: a literature review. Clinical therapeutics. 1984;6(5):592.
6. Rogers P, Bullman R. Prescription medicine compliance: a review of the baseline of knowledge-A report of the national council on patient information and education. JOURNAL OF PHARMACOEPIDEMIOLOGY-BINGHAMTON-. 1995; 3:3-36.
7. Grymonpre RE, Didur CD, Montgomery PR, Sitar DS. Pill count, self-report, and pharmacy claims data to measure medication adherence in the elderly. The Annals of pharmacotherapy. 1998;32(7/8):749-54.
8. Wright E. Non-compliance—or how many aunts has Matilda? The Lancet. 1993;342(8876):909-1
9. Farmer KC. Methods for measuring and monitoring medication regimen adherence in clinical trials and clinical practice. Clinical therapeutics. 1999;21(6):1074-90.
10. Hughes CM. Medication non-adherence in the elderly. Drugs & aging. 2004;21(12):793-811.
11. Fernando B, McKinstry B, Sheikh A. Reducing medication-related adverse events in elderly patients. Reviews in Clinical Gerontology. 2006;16(1):79.
12. van Eijken M, Tsang S, Wensing M, de Smet PA, Grol RP. Interventions to improve medication compliance in older patients living in the

community. Drugs & aging. 2003;20(3):229-40.

13. Gray SL, Mahoney JE, Blough DK. Medication adherence in elderly patients receiving home health services following hospital discharge. The Annals of pharmacotherapy. 2001;35(5):539-45.
14. Villanueva Egan L. [Advances in hormonal contraception]. Ginecologia y obstetricia de Mexico. 2007;75(1):35.
15. Hatcher RA, Trussell J, Stewart F, Stewart GK, Kowal D, Guest F, et al. Contraceptive technology: two special sections; AIDS and abnormal pap smears; Contraceptive technology: two special sections; AIDS and abnormal pap smears: Irvington Publishers; 1994.
16. Tafelski T, Boehm KE. Contraception in the adolescent patient. Primary care. 1995;22(1):145.
17. Chi I-C. The progestin-only pills and the levonorgestrel-releasing IUD: two progestin-only contraceptives. Clinical Obstetrics and Gynecology. 1995;38(4):872-89.
18. Mauck C, Glover LH, Miller E, Allen S, Archer DF, Blumenthal P, et al. Lea's Shield®: A study of the safety and efficacy of a new vaginal barrier contraceptive used with and without spermicide. Contraception. 1996;53(6):329-35.
19. Peterson HB. A 40–Year-Old Woman Considering Contraception. JAMA: The Journal of the American Medical Association. 1998;279(20):1651-8.
20. Potts M, Denny C. Safety implications of transferring the oral contraceptive from prescription-only to over-the-counter status. Drug safety. 1995;13(6):333-7.
21. Rosenberg MJ, Waugh MS, Meehan TE. Use and misuse of oral contraceptives: risk indicators for poor pill taking and discontinuation. Contraception. 1995;51(5):283-8.
22. JANET RA, Sharon K, Robert M. Abnormal uterine bleeding. Am Fam Physician. 2004;69(8):1915-26.
23. Jones EE. Androgenic effects of oral contraceptives: implications for patient compliance. The American journal of medicine. 1995;98(1): S116-S9.
24. Rosenberg MJ, Waugh M, Long S. Unintended pregnancies and use, misuse and discontinuation of oral contraceptives. The Journal of reproductive medicine. 1995;40(5):355.
25. McGuffey EC. Contraceptive options for the 1990s. Journal of the American Pharmaceutical Association (Washington, DC: 1996). 1997(2):149.
26. Potter LS. How effective are contraceptives? The determination and measurement of pregnancy rates. Obstetrics & Gynecology. 1996;88(3):13S-23S.
27. Nutley T, Dunson T. Treatment of bleeding problems associated with progestin-only contraceptives: survey results. Advances in Contraception. 1997;13(4):419-28.
28. Harel Z, Biro FM, Kollar LM, Rauh JL. Adolescents' reasons for and experience after discontinuation of the long-acting contraceptives Depo-Provera and Norplant. Journal of adolescent health. 1996;19(2):118-23.
29. Dawe F, Rainford L, Britain G. Contraception and sexual health, 2003: Office for National Statistics; 2004.
30. Wulf D, Institute AG. Sharing responsibility: women, society & abortion worldwide: The Institute; 1999.
31. Bankole A, Westoff CF. The consistency and validity of reproductive attitudes: evidence from Morocco. Journal of biosocial science. 1998;30(04):439-55.
32. Koenig MA, Acharya R, Singh S, Roy TK. Do current measurement approaches underestimate levels of unwanted childbearing? Evidence from rural India. Population Studies. 2006;60(3):243-56.
33. Schoen R, Astone NM, Kim YJ, Nathanson CA, Fields JM. Do fertility intentions affect fertility behavior? Journal of Marriage and the Family. 1999:790-9.
34. Tan PC, Tey NP. Do fertility intentions predict subsequent behavior? Evidence from Peninsular Malaysia. Studies in Family Planning. 1994:222-31.
35. MAZHARUL ISLAM M, Bairagi R. Fertility intentions and subsequent fertility behaviour in Matlab: Do fertility intentions matter? Journal of biosocial science. 2003;35(04):615-9.
36. Gipson JD, Koenig MA, Hindin MJ. The effects of unintended pregnancy on infant, child, and parental health: a review of the literature. Studies in Family Planning. 2008;39(1):18-38.
37. Raymond E, Taylor D, Trussell J, Steiner MJ. Minimum effectiveness of the levonorgestrel regimen of emergency contraception. Contraception. 2004;69(1):79-81.