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Minor concerns underlying contraceptives: Are they valid?

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Abstract--The safety of hormonal contraceptives (HCs) has been discussed in multiple studies in the medical literature. HCs are effective contraception methods and are commonly prescribed worldwide. However, Women have many misconceptions leading them to avoid using HCs even when they are indicated. Therefore, the aim of this review was to discuss the most common questions and concerns in an objective manner regarding weight gain, mood changes, libido, the time needed to return to fertility after discontinuation, the effects of simultaneous use of antibiotics and some of the most common side effects. HCs were found to be beneficial in reducing symptoms of many physiological and non-physiological conditions including primary dysmenorrhea, heavy menstrual bleeding, hirsutism, and Endometriosis- related pain. HCs are safe and the available evidence support their usage.

Keywords---hormonal contraceptives, Oral contraceptives, Pregnancy.

Introduction

Prevention of pregnancy is one of the major subjects continuously discussed by medical professionals worldwide. The use of hormonal and non-hormonal methods has helped women in various ways including the prevention of some health issues that used to be a cause of high morbidity. Their benefits and the associated side effects make its use somewhat of a controversial topic. However, have all the side effects been evidence-weighted? In this context, studies emerged to find out the causes of the initiation and discontinuation of hormonal contraceptives (HC) on the psychological and pathological levels [1].

Misconceptions regarding the adjacent use of antibiotics and the lack of knowledge in the fields of non-contraceptive benefits [2] will always raise a false flag for patients when provided with the option of using hormonal therapies. Weight gain, Mood changes especially due to mental pathologies including but not restricted to bipolar disorder and depression, Libido, and the return to fertility are some of the common concerns regarding the use of HC [3], [4]. Although male contraceptives has been discussed in the medical trials, their existence remains to be seen as the industry seems uninterested in that subject [5] Therefore, this review will mainly discuss female HC and try to answer some of the most common questions repeatedly asked by concerned females regarding their use.

Does hormonal contraceptives cause weight gain?

Many women believe that HC can cause weight gain leading them to stop taking it after a short time of initiation or even makes their use out of the question in the first place [6]. However, this belief might be based on self-report of side effects and not an actual weight change [7], [8] .Many clinicians believe that progestin-only contraceptives cause minimal weight gain [9].

A Cochrane systematic review in 2014, found no big difference in weight gain between the group that was using combination HC and others on Placebo or no intervention at all. The actual mean weight gain was limited (i.e. less than 2 kilograms for most studies up to one year). [10]

Although the evidence was not strong enough to find certainty that HC do not cause some weight gain, no major effects were to be found [10]. Moreover, it was found that women did not actually stop taking HC because of fears of weight gain [10].

Mood changes

Understanding the Characteristics of women who report sexual and mood changes during the period when they're on the pill can further help clinicians in the process of counseling women on the effects of oral contraceptives(OC) [11]. For example, it is feared that women with previous or ongoing mood disorders such as anxiety depression, or eating disorder have a higher risk of experiencing these side effects when taking HCs [12].

In 2016, a systematic review concluded that the use of OC, levonorgestrel-releasing IUD, and DMPA did not have an impact on the course of the ongoing disease in women with depressive, or bipolar disorders compared to no usage of HC [13]. Studies found that moodiness as a side effect to HC increased the rates of discontinuation in women who have had them [14]. It is however worth to note that most reasons for discontinuation were not related to side effects, as it is widely believed [14].

In 2016, a Danish study from the University of Copenhagen Suggested that depression might be an actual outcome of the use of OCs especially in adolescents. HC usage was associated with a subsequent use of antidepressants or a first-time diagnosis of depression [15].

While the available data are conflicting, major studies note that mood disorders of various types are not a proficient reason to avoid the use of hormonal methods of contraception [16]–[18].

Libido

A 2006 retrospective study in women with more than 6 months of sexual dysfunction and on OCs found an increase in Sexual Hormone Binding Globulin (SHBG) up to 4 times in comparison to women who were not [19]. While the androgen suppression caused by the elevated levels of SHBG is alarming in some studies [19], others suggest that other elements are much more important in determining the effects of HC on libido rather than the contraception method [20]. In 2013, a systematic review found a relationship between the use of combined oral contraceptives (COCs) and sexual desire. 85% of women on COCs reported either an increase or no change at all in their sexual desire, while 15% reported decreased libido only when the dose of Ethinylestradiol (the estrogen found in COCs) was 15 µg or more [21]. Women on depot medroxyprogesterone acetate (DMPA), contraceptive rings, and implants were more common to report a lack of sexual interest compared with copper Intrauterine device (IUD) users [22].

Return to Fertility

Several studies reported some delay in return to fertility in OCs users. However, it was temporary and limited to the early few months of discontinuation [4]. Moreover, the return to fertility in women who were using OCs, both cyclic and continuous, was comparable to other methods of contraception [4]. Women returned to normal menses or got pregnant within the duration of 1 year [23, 24]

The usage of antibiotics with HC

Some studies found that antibiotics usage (other than Rifampin) is associated with decreased effect of OCs [23]. In this context, Rifampin and non-rifampin antibiotics and their relationship to HCs were studied. A recent systematic review showed that Rifampin has an actual effect on reducing the systemic exposure of HCs [24]. However, the risk of pregnancy was not studied [24].

Another systematic review in 2018, failed to find any drug interaction between non-rifampin antibiotics and HCs concluding that no fear is justifiable when having to use antibiotics while on OCs, emergency contraception pills, or the combined vaginal ring [25]. Another study was underway under the suspicion that antibiotics (other than enzyme-inducing antibacterial drugs such as rifabutin and rifampicin) had a similar effect in impairing the efficacy of hormonal contraceptives [26]. Results published indicated a seven-fold increase in unintended pregnancy in women taking antibiotics in comparison to the control group (and 13-folds when using enzyme-inducing antibacterial drugs) [26]. The study concluded that women taking hormonal antibiotics should be warned of decreased effectiveness when taking antibiotics [26].

Non-contraceptive benefits for HCs

Interestingly enough, a lot had been said regarding the less common side effects of HCs but very little is talked about their positives [2]. Hormonal contraceptives offer a solution to many physiological and psychological effects of estrogen on the female body such primary dysmenorrhea [27] heavy menstrual bleeding, hirsutism, Endometriosis- related pain [29] [30] [32], [33]. Studies showed that the estrogen element in OCs reduced the bleeding in women with unacceptable menorrhagia [27], [28]. Some COCs have been prescribed as a treatment to acne [29]. In addition, they are a treatment option for hirsutism [30], [31].

The relationship between cancer and HCs

Some women might avoid contraceptives, as they fear the risk of developing cancer. In this context, A 2017 study provided some relief. It showed that women who would like to use OCs are not exposed to an increase in the risk of cancer. On the contrary, OCs reduced the risk of colorectal, endometrial, and ovarian cancers even after stop using them [32], [33].

Common Side Effects

Early side effects including headache, nausea, and breast tenderness can present early after the initiation of OCs. Although they became less common with the newer generations [34]. These symptoms often resolve spontaneously over a short period. However, their prolonged course could lead some women to discontinuation [14], [34]. Unscheduled bleeding, also known as 'breakthrough bleeding', is the most common early side effect. Although the mechanism of this bleeding is not fully understood, it is mostly blamed on progestins [35]. It is still one of the reasons for discontinuation even though its course is mostly limited to the first few months of initiation.

Cigarette smoking was indicated as a risk factor for this side effect, adversely affecting cycle control by increasing estrogen catabolism [36]. Smoking cessation is advisable for women on OCs in order not to decrease their efficacy and prevent unwanted pregnancies [36]. The use of OCs was not associated with secondary amenorrhea [37].

Summery and Recommendations

Hormonal contraceptives is widely used and women have many concerns regarding their risks and benefits. In this review, we tried to present the available data on various common questions. Evidence suggested that the benefits outweighs the side effects. OCs are safe and recommended as an effective treatment option for many conditions and can improve the quality of life.

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