

Topic Brief: Recurrent UTI and Hormonal Birth Control

Date: 9/20/2019

Nomination Number: 872

Purpose: This document summarizes the information addressing a nomination submitted on 5/6/2019 through the Effective Health Care Website. This information was used to inform the Evidence-based Practice Center (EPC) Program decisions about whether to produce an evidence report on the topic, and if so, what type of evidence report would be most suitable.

Issue: There are a number of risk factors for recurrent urinary tract infections. The nominator is concerned that oral contraceptive pills might increase her risk of recurrent urinary tract infections, and is interested in a primary study on this issue.

Program Decision: The EPC Program will not develop a new systematic review because the harms of oral contraceptives have been reviewed in multiple recent systematic reviews.

Key findings

- Risk factors for recurrent UTI are well-established, and do not include oral contraceptive use.
- Harms of oral contraceptive pills have been reviewed in five recent systematic reviews; none mention recurrent UTI as a harm.
- Reported harms of oral contraceptive pills include headache, nausea, breast pain, bleeding problems, and weight changes.

Background

- Urinary tract infections (UTI) include infections in any part of the urinary tract such as the urethra, bladder, ureters, and kidneys.¹
- According to the American Urological Association recurrent uncomplicated UTI is defined as two episodes of acute bacterial cystitis within six months or three episodes within one year.²
- According to a 2016 analysis of MarketScan claims the overall incidence of recurrent uncomplicated UTIs was 102 per 100,000 women, highest among women ages 18–34 and 55–64.³
- Most infections in women are caused by bacteria from the bowel reaching the bladder or urethra.¹
- Risk factors for recurrent UTI include sexual intercourse, especially with a new sexual partner; changes to bacterial flora of the vagina such as estrogen deficiency in postmenopausal women; use of spermicides; pregnancy; poor hygiene; age, either young children or older adults; and structural urinary tract problems.⁴

- For women who have recurrent infections, switching to a new form birth control might help if they are using diaphragms, unlubricated condoms, or spermicide.⁵

Scope

1. Do oral contraceptive pills increase risk for recurrent urinary tract infection?

Table 1. Questions and PICOTS (population, intervention, comparator, outcome, timing and setting)

| | |
|----------------------|---|
| Questions | |
| Population | Women taking oral contraceptive pills without structural urinary tract problems |
| Interventions | Oral contraceptive pills |
| Comparators | No contraception Other type of contraception |
| Outcomes | Urinary tract infection Recurrent uncomplicated urinary tract infection (two episodes of acute bacterial cystitis within six months or three episodes within one year) |
| Timing | Any |
| Setting | Outpatient |

Assessment Methods

See Appendix A.

Summary of Literature Findings

We identified five systematic reviews on the use of oral contraceptive pills for a variety of indications. All reviews included a search for harms, and none identified UTI.

See Appendix B for detailed assessments of all EPC selection criteria.

Summary of Selection Criteria Assessment

Oral contraceptive pills are commonly used for a variety of conditions including contraception. UTI is not a commonly identified adverse effect in literature; and oral contraceptive pills are not commonly cited as a risk factor for recurrent UTI. While a new systematic review might address this concern, we did not identify uncertainty in the existing literature to suggest that a new review might identify new or different findings.

Please see Appendix B for detailed assessments of individual EPC Program selection criteria.

References

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Author

Christine Chang, MD MPH

Conflict of Interest: None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

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Appendix A:

We assessed nomination for priority for a systematic review or other AHRQ Effective Health Care report with a hierarchical process using established selection criteria. Assessment of each criteria determined the need to evaluate the next one. See Appendix B for detailed description of the criteria.

Appropriateness and Importance

We assessed the nomination for appropriateness and importance.

Desirability of New Review/Absence of Duplication

We searched for high-quality, completed or in-process evidence reviews published in the last three years (September 2016-October 2019) on the questions of the nomination from these sources:

- AHRQ: Evidence reports and technology assessments
 - AHRQ Evidence Reports <https://www.ahrq.gov/research/findings/evidence-based-reports/index.html>
 - EHC Program <https://effectivehealthcare.ahrq.gov/>
 - US Preventive Services Task Force <https://www.uspreventiveservicestaskforce.org/>
 - AHRQ Technology Assessment Program <https://www.ahrq.gov/research/findings/ta/index.html>
- US Department of Veterans Affairs Products publications
 - Evidence Synthesis Program <https://www.hsr.d.research.va.gov/publications/esp/>
 - VA/Department of Defense Evidence-Based Clinical Practice Guideline Program <https://www.healthquality.va.gov/>
- Cochrane Systematic Reviews <https://www.cochranelibrary.com/>
- PROSPERO Database (international prospective register of systematic reviews and protocols) <http://www.crd.york.ac.uk/prospéro/>
- PubMed <https://www.ncbi.nlm.nih.gov/pubmed/>

Impact of a New Evidence Review

The impact of a new evidence review was qualitatively assessed by analyzing the current standard of care, the existence of potential knowledge gaps, and practice variation. We considered whether it was possible for this review to influence the current state of practice through various dissemination pathways (practice recommendation, clinical guidelines, etc.).

Appendix B. Selection Criteria Assessment

| Selection Criteria | Assessment |
|--|---|
| 1. Appropriateness | |
| 1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the U.S.? | Yes |
| 1b. Is the nomination a request for an evidence report? | No |
| 1c. Is the focus on effectiveness or comparative effectiveness? | No |
| 1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic? | No. Among contraceptive methods, use of spermicide is cited frequently as a risk for UTI. Use of oral contraceptives appears to reduce the rate of bacterial vaginosis and do not appear to affect risk for UTI. ⁶ |
| 2. Importance | |
| 2a. Represents a significant disease burden; large proportion of the population | 12.6% of US women are on oral contraceptive pills in 2015-2017. Pill use decreased with increasing age: 16.6% of women aged 15–19 were currently using the pill compared with 19.5% of women aged 20–29, 11.0% of those aged 30–39, and 5.1% of those aged 40–49. ⁷ |
| 2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population | Unknown |
| 2c. Incorporates issues around both clinical benefits and potential clinical harms | The nomination is focused on a specific harm, recurrent uncomplicated UTI |
| 2d. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers | Oral contraceptive pills are commonly used for a variety of conditions in addition to contraception. |
| 3. Desirability of a New Evidence Review/Absence of Duplication | |
| 3. A recent high-quality systematic review or other evidence review is not available on this topic | No recent high quality reviews specifically address recurrent uncomplicated UTI with oral contraceptive pill use. We identified five systematic reviews that sought adverse events broadly, and none mentioned this specific harm. Harms reported include headache, nausea, breast pain, bleeding problems, and weight changes. |

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| | <ul style="list-style-type: none"> • Champaneria et al. Hormonal contraception and pelvic floor function: a systematic review. 2016⁸ • Brown et al. Oral contraceptives for pain associated with endometriosis. 2018. Developed under the Cochrane Collaboration⁹ • Lethaby et al. Combined hormonal contraceptives for heavy menstrual bleeding. 2019. Developed under the Cochrane Collaboration¹⁰ • Kennedy et al. Should oral contraceptive pills be available without a prescription? A systematic review of over-the-counter and pharmacy access availability. 2019¹¹ • Luo et al. Oral and intrauterine progestogens for atypical endometrial hyperplasia. 2018¹² |
| 4. Impact of a New Evidence Review | |
| 4a. Is the standard of care unclear (guidelines not available or guidelines inconsistent, indicating an information gap that may be addressed by a new evidence review)? | There is guidance from ACOG ¹³ and AUA ² around exploring risk factors for recurrent uncomplicated UTI. Neither includes oral contraceptive pills as a risk factor. |
| 4b. Is there practice variation (guideline inconsistent with current practice, indicating a potential implementation gap and not best addressed by a new evidence review)? | Guidelines are consistent regarding risk factors for recurrent uncomplicated UTI. ^{2, 13} |

Abbreviations: ACOG=American College of Obstetrics and Gynecology; AHRQ=Agency for Healthcare Research and Quality; American Urological Association; UTI=urinary tract infection