OC–antibiotic interactions: Opposing views

The authors of "Avoiding drug interactions: Here's help" (*J Fam Pract.* 2010;59:322-329) provided useful resources, but there were errors in the list of medications cited among those that decrease the efficacy of oral contraceptives in Table 2 on page 327. While I understand that there are space limitations for manuscripts and that a single manuscript cannot exhaustively cover a subject as broad as drug interactions, I feel compelled to provide the correct information.

There is a body of research demonstrating that penicillins[1] and tetracyclines[2]—both listed as reducing the effect of oral contraceptives (OCs)—do not do so. The only antibiotics known to decrease the effect of both combined and progestin-only OCs are rifampicin and rifabutin.[3,4]

Additionally, only 1 anticonvulsant was listed in Table 2 of the article. A number of others, including phenytoin, carbamazepine, barbiturates, primidone, topiramate, and oxcarbazepine, also reduce the effect of OCs.[3,4]

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The authors respond:

We thank Dr. Rubin for her comments. We agree that some imperfections may occur in an article on such a fast-developing and extremely broad topic as drug–drug interactions.

The specific question of interaction between oral contraceptives (OCs) and other medications is certainly of great interest, given the large number of women who take OCs and simultaneously receive other drugs. In the case of antibiotics, Dr. Rubin is correct in citing a well-known case-control study[1] in which no major differences were seen in contraceptive failure between women taking penicillin or tetracycline with OCs vs women who were using OCs but not receiving such antibiotics.

That said, the literature contains a number of case reports that suggest potential interactions between OCs and penicillin or tetracycline.[2-4] The suspected cause of these potential interactions: the interference of oral antibiotics with gut flora, which hydrolyze conjugated steroids for the enterohepatic recirculation. As a result, serum contraceptive levels could drop and expose women to a higher risk of pregnancy.[2,3] Also, retrospective surveys—primarily from dermatology practices—have reported pregnancies in some OC users who concomitantly were treated with penicillin or tetracycline.[4] Because some women exhibit a large decrease in plasma contraceptive levels when they take penicillins or tetracyclines (and it is not possible to identify those who might be affected in advance), a cautious approach is advised.

Regarding anticonvulsant–OC interactions, article length constraints did, indeed, come into play. We thought it best to list only phenobarbital, as it is representative of most compounds in this class of drugs.

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3. Bacon JF, Shenfield GM. Pregnancy attributable to interaction between tetracycline and oral contraceptives. *Br Med J.* 1980;280:293.
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