

# AMERICAN ACADEMY OF PEDIATRICS

Committee on Drugs

## Breast-feeding and Contraception

Emphasis on the advantages of breast-feeding to the infant and to the nursing mother has been accompanied by resurgent interest in this practice. Although breast-feeding has many desirable features, the needs of the lactating mother and her nursing infant may not always be complementary. Possible competition between the mother's requirement for adequate contraception and the infant's nutrition or maturation is an important example. For this reason, the relationship between breast-feeding and various forms of contraception has been reviewed.

### LACTATIONAL AMENORRHEA

Nursing mothers experience lactational amenorrhea of longer duration than postpartum amenorrhea of women who do not breast-feed their infants.<sup>1-3</sup> In addition to a decline in maternal estrogen levels following delivery, hyperprolactinemia—enhanced by suckling—facilitates the onset of breast milk production.<sup>4,5</sup> Depending to some extent on the frequency of breast-feeding, modestly raised prolactin levels may be maintained for several or many months post partum.<sup>4,6-8</sup> Many studies suggest that prolactin exerts antagonistic effects on the secretion and actions of gonadotropins, and lactational amenorrhea seems to parallel the presence of hyperprolactinemia.<sup>7,8</sup> As breast-feeding continues, the prolactin levels usually return to normal, with some episodic increases occurring in response to suckling. The contraceptive action provided by breast-feeding alone is well established. When breast-feeding is used exclusively and amenorrhea exists, ovulation usually does not occur before the end of the tenth postpartum week.<sup>3</sup> However, this contraceptive effect is not universal; 5% to 10% of women with lactational amenorrhea become pregnant, and an even greater proportion of nursing mothers who have reinitiated menstruation become pregnant.<sup>2,9</sup> These data indicate that women who want to breast-feed and also avoid pregnancy need

to use contraception for complete protection, beginning about four to five weeks post partum when breast-feeding is firmly established.<sup>9</sup>

### BARRIER CONTRACEPTIVES

Barrier contraception (such as that provided by a condom or a diaphragm with a spermicidal agent) does not affect either breast-feeding or the nursing infant and is an attractive contraceptive method for those who will use it. Use of an intrauterine device also appears to be compatible with uneventful lactation for most mothers, and has no adverse effect on breast-feeding.<sup>10-12</sup> However, the increased risk of pelvic inflammatory disease in women who use intrauterine devices makes their use less desirable in women who have not completed their families or have other medical contraindications. In planning postpartum care for nursing mothers, clinicians can recommend these methods, when cognizant of their somewhat lower contraceptive efficacy, as ones that will not interfere with nursing.

### STEROIDAL CONTRACEPTIVES

Although the use of steroidal contraceptives during nursing has drawn much attention, the reviews of clinical studies on their effects have produced confusing recommendations.<sup>13-20</sup> Several pertinent questions can be asked regarding the impact of steroidal contraceptives on breast-feeding. They include the assessment of possible changes in the quantity and quality of milk or the duration of lactation, any unusual influence on maternal well-being, the dosing of the infant, and any effects on the immediate and long-term growth and development of the child. (Changes in steroidal contraceptive practices have moved ahead of studies of their possible influence on breast-feeding, and much of the available information is based on steroid dosages infrequently used in current practice.)

Most studies of the use of combined estrogen-

progestin contraceptive pills, usually containing 30 to 50  $\mu\text{g}$  of ethinyl estradiol or 50 to 100  $\mu\text{g}$  of mestranol, indicate that lactation is not inhibited in women who wish to nurse their infants as long as it is not used in the immediate postpartum period. However, some dose-related suppression of the quantity of milk produced and the duration of lactation is found with extended use.<sup>13-15,18,21-23</sup> A change in the composition of breast milk has not been clearly related to the use of contraceptive pills. As the administration of estrogen tends to increase prolactin secretion, which would enhance milk production, it is believed that these changes in lactation result from a direct suppressive effect of estrogen on the breast. In general, this impression is confirmed by studies of progestin-only contraceptives that reveal no consistent alteration of breast milk composition or appreciable reduction of milk production or the duration of lactation.<sup>13,15,18,23-28</sup> Progestin-only oral contraceptives are slightly less effective than combined oral contraceptives and their use is more likely to be associated with irregular uterine bleeding than is use of the combination pill.

While several variables—age, parity, previous breast-feeding experience, motivation, support from family members and physicians, weight, state of health, and nutrition—influence a woman's ability to breast-feed adequately, these variables have seldom been controlled in breast-feeding studies. A recent, well-designed study of the effects of two combination pills (one containing 250  $\mu\text{g}$  of *d*-norgestrel and 50  $\mu\text{g}$  of ethinyl estradiol; the other containing 150  $\mu\text{g}$  of *d*-norgestrel and 30  $\mu\text{g}$  of ethinyl estradiol) and one progestin-only pill (containing 30  $\mu\text{g}$  of *d*-norgestrel) emphasizes that the composition and volume of breast milk varies considerably in the absence of steroidal contraception, and that whereas changes in these values occur in association with contraceptive use, they tend to remain within the normal ranges.<sup>29</sup> No unique effect of steroidal contraceptives on nursing mothers has been confirmed.

#### SECRETION OF STEROIDAL CONTRACEPTIVES IN BREAST MILK

The awareness that many drugs are secreted in breast milk has prompted studies of the proportion of estrogen and progestin dosage transferred to infants who nurse, as well as a search for effects of such medication on the infant.<sup>30</sup> Several studies indicate that an infant consuming 600 ml of breast milk daily from a mother using an oral contraceptive containing 50  $\mu\text{g}$  of ethinyl estradiol probably receives a daily dose in the range of 10 ng.<sup>31,32</sup> The amount of natural estradiol received by infants who

consume a similar volume of milk from mothers not using oral contraceptives is estimated at 3 to 6 ng during anovulatory cycles and 6 to 12 ng during ovulatory cycles.<sup>32</sup> Although gynecomastia appeared in the infant of one mother who took large doses of an estrogen-containing oral contraceptive, no consistent long-term adverse effects on children's growth and development have been described.<sup>14,21,33</sup> Progestational agents are not constituents of breast milk during anovulatory lactation, but they are secreted into breast milk by women who use steroidal contraceptives.<sup>34-36</sup> In one study that began eight weeks post partum, mothers took one of three contraceptive formulations—30  $\mu\text{g}$  of *d*-norgestrel alone, 150  $\mu\text{g}$  of *d*-norgestrel and 30  $\mu\text{g}$  of ethinyl estradiol, or 250  $\mu\text{g}$  of *d*-norgestrel and 50  $\mu\text{g}$  of ethinyl estradiol—and their infants received 0.03  $\mu\text{g}$  (estimated), 0.15  $\mu\text{g}$ , and 0.30  $\mu\text{g}$  of *d*-norgestrel, respectively, per 600 ml of breast milk.<sup>37</sup> Evidence from the same study indicates that *d*-norgestrel is metabolized rather than accumulated by the infants. To date, no adverse effects have been identified in a nursing infant as a result of progestational agent taken by the mother.

#### COMMENT

As suggested by the data presented in this statement, more than one possible solution is available to the lactating mother who wishes to use contraception: physicians who care for her and her infant should appreciate the importance of reviewing all of the available contraceptive methods in the light of each personal situation so that an informed, individualized, and effective choice can be made.

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