EDITORIAL

The complexities of women’s sexuality and the menopause transition

Menopause influences physical, psychological, and interpersonal aspects of a woman’s life and therefore could have profound effects, both positive and negative, on her sexuality. Estrogen levels markedly fall, and testosterone activity continues its slow decline, which begins in a woman’s late 30s and is not affected by menopause per se. The woman’s own reaction to permanent infertility, the meaning of menopause to her and to her partner, her current feelings toward her partner, and the severity of life stressors further modulate her sexuality. Precipitation of depression in women with and without a history of depression is a major confound.\(^1,2\) Moreover, the vasomotor symptoms, sleep disturbance, changes in skin sensations, palpitations, and headaches frequently reported by women transitioning to menopause influence their motivation to be sexual and their ability to stay focused during sexual experiences. It is worth considering briefly the complexity and possible sexual repercussions of these hormonal changes. For premenopausal but imminently perimenopausal women, potentially sexually damaging changes include ongoing reduction of intracellular androgens from adrenal prohormones, which begins in the late 30s, fewer ovulatory peaks of testosterone, and longer anovulatory cycles associated with higher estrogen levels. The latter are associated with increased breast tenderness as well as increased likelihood of dysfunctional uterine bleeding (and possible hysterectomy as a consequence). For premenopausal women, the large fluctuations in estrogen maintain the tendency toward breast tenderness, along with precipitating vasomotor symptoms and sleep disturbance, which may adversely influence sexual function. Postmenopausal women who are not receiving systemic estrogen therapy now have permanently low estrogen levels. Symptoms from vulvovaginal atrophy may occur even at this early stage, vasomotor symptoms and sleep disturbance may continue, whereas breast tenderness, unpredictable blood loss, and contraceptive needs are no longer concerns. The slowly progressive decline in intracellular testosterone production from adrenal prohormones continues. Ovarian production of prohormones also decreases, while ovarian testosterone production is maintained. When women undergo bilateral oophorectomy, both estrogen and androgen activities are even lower given the loss of ovarian prohormones and the loss of any remaining ovarian estrogen production.

The resilience shown by the majority of women to the interruption of their sexual response and pleasure from these inevitable marked reductions of sex hormones is illustrated in the study reported by Mishra and Kuh\(^3\) in this issue of Menopause. A total of 1,525 women completed annual questionnaires on perceived positive and negative changes in sex life and difficulties with intercourse during the previous year as they aged from 47 to 54 years. At each time point, less than one third of women reported any sexual decline in the previous year. Moreover, close to one fifth reported improvement at each time point. Similarly, “difficulties with intercourse” were found in less than 20% of women at six of seven time points. In any given year, some 15% to 20% of women remaining premenopausal reported a decline in sex life during the previous year. Of the groups moving from pre- to perimenopause, remaining perimenopausal, moving from peri- to postmenopause, or remaining postmenopausal, as well as those experiencing hysterectomy or receiving hormone therapy, some 20% to 27% reported a decline in sex life the previous year. Interestingly, at age 53, a similar percentage of women who remained premenopausal or who had been postmenopausal for at least a year reported a decline in sex life the previous year. Thus, the vast majority of women were not negatively affected by the major hormonal shifts at this time.

This study achieved an impressive 68% return rate on all seven annual questionnaires from the 1,525...
women. These women represented 70% of an original cohort studied since their birth in the first week of March 1946, a random sample of 5,362 singleton births in England, Scotland, and Wales. Using sophisticated statistical techniques, these researchers concluded that the occurrence of vaginal dryness was strongly associated with both a decline in sex life and difficulties with intercourse. Vasomotor and somatic symptoms were also linked with difficulties with intercourse, whereas psychological symptoms and life stress were the most important risk factors for a perceived decline in sex life.

Other studies have identified factors that increase resilience to sexual problems despite hormonal changes. These include positive feelings for the partner, both generally and at the time of sexual interaction, mental health, and past positive sexual experiences. Change of partner is also apparently protective, as are positive expectations for the current relationship. The therapeutic implications of these data include the importance of addressing mental health and the couple’s emotional intimacy, respect, trust, and mutual attraction. Encouraging the couple to adopt the behaviors and priorities they had when they were initially together is based on the evidence that women’s sexual response and desire are increased with new relationships.

A previous cross-sectional study of 355 women aged 46 to 60 years attending menopausal clinics in Italy concluded that physical well-being and mental health rather than menopausal status per se were the more important factors regarding middle-aged women’s sexual health. Eight years of longitudinal data on 336 Australian women transitioning to menopause showed that bothersome menopausal symptoms negatively affected the women’s well-being, which influenced their sexual responsivity, which in turn influenced sexual desire. The main predictors of sexual function were found to be past sexual experiences, feelings for the partner, and change of partner rather than androgen status (measured as a total testosterone and free testosterone index). Sexual responsivity and freedom from dyspareunia were predicted by levels of estradiol. Factors that have received little research attention include enjoyment of nonpenetrative sexual activity, partner’s sexual skills and sexual function, and the presence or absence of partner pressure to be sexually active at a certain frequency beyond that with which the woman is comfortable.

So should we conclude that the inevitable hormonal changes are mostly overshadowed by the variable nonhormonal parameters? Previous research suggests this is so. Or are our measures of hormonal action too crude? Might there be subgroups of women vulnerable (possibly genetically) to the sexual effects of reductions in sex hormones? We need a more sophisticated understanding of factors that influence sensitivity to remaining sex hormones. These factors might include numbers of coactivator and corepressor proteins that influence transcription, variations in the estrogen and the androgen receptor genes, and in the activity of steroidogenic enzymes in target cells to produce testosterone and estrogen from remaining prohormones. Of note, serum levels of testosterone, even if measured by chromatography followed by sequential mass spectroscopy methods that are sensitive to the low levels found in women, do not reflect the major portion of testosterone activity of older women that is derived from this intracellular production.

We look forward to further data from this cohort of women as they continue their sexual lives over the next few decades. Including more details about hormone therapy will greatly increase the study’s value: Did some of the women with hysterectomy also receive hormone therapy? Was the latter systemic or local? Was testosterone ever involved? Were ovaries preserved when the hysterectomies were done? Given the current climate of advocating only local estrogen therapy in the longer term, the consequences of estrogen depletion on the brain’s appraisal of sexual stimuli and their processing on subjective arousal, as well as initiating the changes in the autonomic nervous system to increase genital congestion, require study. Early research suggests marked differences in brain function between estrogen- and testosterone-replete or -deficient women as they view erotic stimuli.

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