

# Guest Editorial

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## ‘Stages of Reproductive Aging’ for Menopausal Transition: Continues to evolve

Menarche, the first menstrual period, and menopause, 12 months after the final menstrual period, are life changing milestones in a woman’s life. These are important physiological events that are preceded and followed by remarkable neuroendocrine and other clinical changes. In case of menarche there occurs the maturation of the hypothalamo-pituitary-ovarian (HPO) axis and, in menopause, the function of the axis is declining. Both processes are spread over a time period of several years with different time-cuts and progressively changing hormonal milieu. These spans of life in both the cases are conveniently divided into stages for their use in clinical practice and research. While Tanners staging for pubertal development is well-established and regularly used widely both by clinicians and researchers alike, staging of menopausal transition still continues to evolve. One could arbitrarily divide menopause into premenopause for women having regular cycles for the past 12 months, while those women who had irregular cycles in the past 12 months could be designated as perimenopausal and those whose final menstrual period was 12 months ago are considered postmenopausal. Else pre-, peri- and postmenopause are derived by months since the last period <2, 2 to 12 and >12 months respectively as was done by Cooper GS et al.<sup>1</sup> However, for many reasons, this simple staging system or more complex ones (*vide infra*) do not seem to fulfill the very purpose of staging as bias does creep in as incident-cohort design is not always feasible.<sup>2</sup> One of the important purposes of staging is to distinguish whether the changes occurring at menopause are related to decline in ovarian function or simply related to aging.

In India, Dr Behram Anklesaria was pioneer in suggesting staging of menopause.<sup>3</sup> He has published it as early as 1996 and updated versions were included in subsequent publications.<sup>4-6</sup> In Stages of Reproductive Aging Workshop (STRAW) in 2001, seven stages were identified. Stages identified were three stages during reproductive years before menopausal transition, two stages during perimenopausal transitional phase and the remaining two during postmenopause.<sup>7</sup> Changes in bleeding pattern during the late reproductive and the early perimenopausal phases have been considered as clinical marker of those phases. However, this changing menstrual pattern does not occur uniformly in all women and hence additional biological markers occurring in temporal relation to changing menstrual patterns to identify different stages have been considered.<sup>8</sup> In the most recent workshop STRAW+10, advances relating to changes in HPO axis during menopausal transition were reviewed. The markers considered were inhibin-B, antimullerian hormone (AMH), antral follicle count (AFC) besides estradiol and FSH. STRAW+10 has redefined the STRAW stages and given rationale for such a revision, e.g. late reproductive phase, has been further subdivided in –3a and –3b on the basis of low AMH and AFC without a discernible change in a menstrual pattern.<sup>9</sup> With updating of reproductive aging system, now the staging has become applicable for clinical decision making for counseling for fertility, contraception, HRT and other research issues. However, the working group has pointed out important knowledge gaps and identified seven research priorities.<sup>9</sup>

Indian Menopause Society has decided to review this important area and evolve consensus for workable staging system for staging menopausal transition in Indian context.



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## REFERENCES

1. Cooper GS, Baird DD, Darden FR. Measures of menopausal status in relation to demographic, reproductive, and behavioral characteristics in a population-based study of women aged 35 to 49 years. *Am J Epidemiol* 2001;153:1159-63.
2. Cain KC, Harlow SD, Little RJ, Nan B, Yosef M, Taffe JR, Elliott MR. Bias due to left truncation and left censoring in longitudinal studies of developmental and disease processes. *Am J Epidemiol* 2011;173:1078-84.
3. Anklesaria BS, Soneji RM. Staging, symptoms and urological problems in the climacteric. In: Krishna UR, Shah D (Eds). *Menopause: Obstetrics and gynecology in perspective* (1st ed). Chennai: Orient Longman Pvt Ltd 1996;p13.
4. Anklesaria BS, Soneji RM. Menopause current concepts FOGSI. Purandare CN, Khadilkar SS (Eds) 2004;201-02.
5. Anklesaria BS. The staging of menopause in Jeffcoate's Principles of Gynecology (7th ed). In: Kumar P, Malhotra N (Eds). Jaypee Brothers Medical Publishers 2008;862-64.
6. Anklesaria BS. The promise of phytoestrogens. *Indian J Pharmacol* 2011;43:369-70.
7. Soules MR, Sherman S, Parrott E, Rebar RW, Santoro N, Utian W, Woods N. Executive summary: Stages of reproductive aging workshop (STRAW). *Fertil Steril* 2001;76:874-78.
8. Harlow SD, Mitchell ES, Crawford S, Nan B, Little R, Taffe J. The ReSTAGE Collaboration: Defining optimal bleeding criteria for onset of early menopausal transition. *Fertil Steril* 2008;89:129-40.
9. Harlow SD, Gass M, Hall JE, Lobo R, Maki P, Rebar RW, et al. Executive summary of the stages of reproductive aging workshop +10: Addressing the unfinished agenda of staging reproductive aging. *Menopause* 2012;19:387-95.