



Women and Mood Swing

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Opinion

Volume 9 Issue 2

Received Date: March 13, 2024

Published Date: April 02, 2024

DOI: 10.23880/oajg-16000285

Abstract

Hormonal imbalance is the root cause of mood swing in men and women. Endocrinologically, men and women differ very much. During the whole lives span the hormonal imbalance occurs naturally three times in a woman's life that is once transition from child to adult, the second time when she gets pregnant and last time is when she enters in menopause but not so happens in man. Some women also get mood swing every month before the periods.

Keywords: Hormonal Imbalance; Puberty; Menopause; Serotonin; Estrogen

Introduction

Mood swings in men and women are very common at any age. Mood swings can be defined as quick changes from feeling happy and content to feeling sad, angry, or frustrated very fast in a person this shift may be due to hormonal imbalance, especially of sex steroids. Men's hormones tend to stay pretty stable whereas in females it is not. Until the age of 30, testosterone level tends to stay pretty stable, but later it declines gradually. One in three men at 75 and above suffer from low levels of testosterone [1]. In addition to mood swings, erectile dysfunction, and sleep problems also develop. Females are more likely than males to experience symptoms of hormonal changes, particularly during menstruation, pregnancy, and menopause [2]. Females suffer from depression after puberty compared to males since females mature earlier. It is surprising to know that the gender gap in depression in the later part of life may continue throughout the lifespan.

Hormone Imbalances Change Female's Life

Estrogen plays an important role in a female's life. In addition to three times in the lifetime of a female i.e.

Puberty, Pregnancy, and Menopause, every month, Repeated. Premenstrual syndrome (PMS) shifts the mood of a woman. Nearly, 48 % of women who are of childbearing age experience PMS, which can disrupt their daily life and cause significant physical discomfort and emotional issues [3,4].

Puberty

Puberty steps in when a baby girl steps in her teens and this is the first phase in a woman's life- A transit period from a child's life to adult life, where hormonal changes take place. At this time, a person undergoes emotional, physical, and psychological changes. Mood shifts and unexplained emotional reactions can be common during this phase of life [5].

Pregnancy

This is the second time there have been changes in hormone levels. These dramatic changes are responsible for the changes in emotions and mood shifts. Because of physical changes, pregnant women often experience emotional stress that can make issues like mood shifts and emotional outpourings more severe [6].

Menopause

This is the third phase of hormonal change. Menopause is a natural aging biological process, a major transition in a woman's life associated with a period of mood shifts. A deep fall in estrogen levels results in a variety of symptoms, including changes in mood, hot flashes, insomnia, and reduced sex drive. Now drugs are available to ease the symptoms in perimenopausal women with hormone replacement drugs. Menopause is the phase that starts after 12 consecutive months without a menstrual period and signifies the end of a female's reproductive phase [7]. Levels of two steroid sex hormones, estrogen and progesterone change drastically, leading to symptoms like hot flashes and vaginal dryness. The menopausal problems may continue for an average of four to five years, though they decrease in frequency and intensity. Some women have their symptoms for a longer period.

Origin of Menopause

The setting of the menopausal phase in a human female's life is still an unsolved puzzle since other mammals except a few do not pass through this phase. Menopause is the time when ovaries are no longer actively synthesizing hormones and marks the end of an important event in a woman's life, i.e. cessation of the menstrual cycles signifying the culmination of childbearing capacity. Women are marked by "the childbearing age" due to the active function of their ovaries. The main purpose is to pass their genes to the next generation, nature's rule "live and reproduce". But human female life does not end here she spends healthy years for decades thereafter but loses fertility [8,9]. Then, why do women long outlive their fertility? This is a common evolutionary hypothesis to be answered. For the first time, researchers from LJMU and the University of Liverpool used a phylogenetic approach and proposed the "grandmother hypothesis," [10].

A generous post-reproductive life span makes sense, if a grandmother improves the survival and reproduction of her grandchildren, strengthening their genes that are passed on to the F2 generation [11,12] for the continuity of her genes. Another interesting phenomenon described by Cant [13] that states "compared to other primates that exhibit a post-reproductive life span, humans stand out, because there is no overlap in reproduction between generations," Cant says. "Women stop breeding on average when the next generation starts to breed." Yet another hypothesis is the "mother hypothesis," which explains that older mothers might profit more by investing resources in their existing children than in giving birth to new ones [14-16]. Menopause is indeed advantageous when a woman has aged enough to face an increased risk of stillbirth, birth defects, and death during delivery [17]. Menopause sets in the 40s or 50s, but

the average age is 51 years of age [17]. At this time their hormone levels stabilise, and the symptoms of menopausal blues disappear and many women feel better [18].

Shifts in Mood

Many conditions and lifestyle choices can cause women to experience severe changes in mood during menopause. This shift in emotion may give a feeling that they come on for no reason. The hormonal changes due to menopause, in addition to its side effects, may be responsible for mood swings, sadness, and even rage during this time. In 70 percent of women estrogen-serotonin balance is out of proportion resulting in irritability. Insufficient amounts of serotonin may contribute to premenstrual depression, as well as fatigue, food cravings, and sleep problems. Estrogen may become the dominant hormone due to the falling levels of progesterone, which may be a contributory factor for the development of irritability and depression [19].

Premenstrual syndrome (PMS-like symptoms) before their periods includes a group of symptoms that occur in women 1 to 2 weeks before a period is still an enigma. In addition to mood shifts, PMS can cause fatigue, changes in appetite, depression, bloating, and more. The severity of these symptoms may change from month to month and they may get worse or improve with age. In the days and weeks before a period, a woman's estrogen-progesterone levels rise and fall dramatically and researchers suspect estrogen is most likely to be blamed. They level out 1 to 2 days after menstruation begins. These shifts may affect mood and behaviour and calcium supplements may help to ease symptoms of depression, anxiety, and emotional fluctuation [19,20].

Premenstrual dysphoric disorder (PMDD) is a more severe and rare type of PMS for which no proper solutions are available till date. The pathophysiology is unclear affects only 5 percent of women of childbearing age. Symptoms of PMDD include extreme shifts in mood, severe depression, extreme irritability, and more [21]. Many women will combine alternative treatments like stress management and dietary changes with medication to ease out from symptoms and mood shift. A chain reaction originating from Frustrations, constant state of stress and worries can lead to severe shifts in mood accompanied with psychological disorders and behavioural conditions translating to disorders including attention deficit hyperactivity disorder (ADHD), depression, bipolar disorder, and more [22].

References

1. Hausmann M (2017) Why sex hormones matter for neuroscience: a very short review on sex, sex hormones,

- and functional brain asymmetries. *J Neurosci Res* 95(1-2): 40-49.
2. Lidborg LH, Cross CP, Boothroyd LG (2022) A meta-analysis of the association between male dimorphism and fitness outcomes in humans. *ELife* 11: e65031.
 3. Gupta PD, Pushkala K (2002) *Human Syndrome*. Oxford and IBH Publishers, New Delhi, India.
 4. Lisa MB (2021) *5 Ways to Know Your Feelings Better*. Nemours Teens Health.
 5. Gupta PD (2020) Menstrual Cycle and its Importance. *Arch Reprod Med Sexual Health* 3(2): 51-54.
 6. Gupta PD, Pushkala K (2019) Menarche: The Essential Event for Motherhood. *J Ageing Restor Med* 2(2): 84.
 7. Gupta PD (2020) Natural and Synthetic Estrogens Regulate Human Health. *J Chem Appl* 2: 21-24.
 8. Ellis S, Franks DW, Natrass S, Cant MA, Bradley DL, et al. (2018) Postreproductive lifespans are rare in mammals. *Ecology and Evolution* 8(5): 2482-2494.
 9. Croft DP, Brent LJ, Franks DW, Cant MA (2015) The evolution of prolonged life after reproduction. *Trends in Ecology & Evolution* 30(7): 407-416.
 10. Hawkes K, O'Connell JF, Jones NG, Alvarez H, Charnov EL (1998) Grand mothering, menopause, and the evolution of human life histories. *Proceedings of the National Academy of Sciences USA* 95(3): 1336-1339.
 11. Caspari R, Lee SH (2004) Older age becomes common late in human evolution. *Proceedings of the National Academy of Sciences USA* 101(30): 10895-10900.
 12. Coall DA, Hertwig R (2010) Grandparental investment: Past, present, and future. *Behavioral and Brain Sciences* 33(1): 1-19.
 13. Cant MA and Johnstone RA (2008) Reproductive conflict and the separation of reproductive generations in humans. *PNAS* 105(14): 5332-5336.
 14. Williams GC (1957) Pleiotropy, natural selection, and the evolution of senescence. *Evolution* 11: 398-411.
 15. Davison R, Gurven M (2022) The importance of elders: Extending Hamilton's force of selection to include intergenerational transfers. *Proc Natl Acad Sci* 119(28): 1-12.
 16. Pavard S, Metcalf CJE, Heyer E (2008) Senescence of reproduction may explain adaptive menopause in humans: a test of the "mother" hypothesis. *Am J Phys Anthropol* 136(2): 194-203.
 17. Gupta PD, Lino A, Swarankar ML (2000). *Mothering A Cause: Practical Knowledge of Reproduction and Motherhood*. Oxford & IBH Publishing Co Pvt Ltd. New Delhi
 18. Gupta PD (2020) Natural and Synthetic Estrogens Regulate Human Health. *J Chem Appl* 2: 21-24.
 19. Ghanbari Z, Haghollahi F, Shariat M, Foroshani AR, Ashrafi M (2009) Effects of calcium supplement therapy in women with premenstrual syndrome. *Taiwan J Obstet Gynecol* 48(2): 124-129.
 20. Gupta PD, Badami S (2024) Multiple Roles of Calcium in Maintaining Human Health. *Clinical Endocrinology and Metabolism* 3(1).
 21. Mishra S, Elliott H, Marwaha R (2024) Premenstrual Dysphoric Disorder. StatPearls Publishing, Treasure Island, Florida.
 22. Jarrett MA (2016) Attention-deficit/hyperactivity disorder (ADHD) symptoms, anxiety symptoms, and executive functioning in emerging adults. *Psychological Assessment* 28(2): 245-250.