

**Editorial***Copyright © All rights are reserved by Abdelmonem Awad Hegazy*

Postponing Menopause and Lengthening Fertile Age for Women's Good Health: A Potential Hope

Abdelmonem Awad Hegazy**Professor and Former Chairman, Anatomy and Embryology Department, Zagazig University, Egypt****Corresponding author:** Abdelmonem Awad Hegazy, Professor and Former Chairman, Anatomy and Embryology Department, Zagazig University, Egypt.**Received Date:** August 09, 2021**Published Date:** September 08, 2021**Abstract**

Menopause is a critical age in a woman's life when menstruation stops and is associated with loss of fertility. Deprivation of female hormones, especially estrogen, may be associated with some physical and psychological disorders that greatly affect the quality of life not only for women but also for men and all family members. Therefore, it is important to discuss the possibility of using cryopreservation to postpone menopause in order to alleviate the menopause-associated disorders and ensure better healthy lives for women and societies. Ovarian tissue cryopreservation has been used successfully to save the harvested ovary from damage that may result from chemotherapy or radiotherapy used to treat cancer cases. Therefore, we suggest cryopreservation of ovarian samples during reproductive age and re-implantation when needed to postpone the onset of menopause. This may save the resected ovarian tissue from degeneration or consumption that occurs naturally within the human body. This possibility can be verified by prospective studies in volunteers aimed at preserving the endocrine function of the ovaries for as long as possible.

Keywords: Cryopreservation; Menopausal disorders; Good female life; Ovary**Introduction**

Menopause is a naturally occurring critical age stage in a woman's life where menstruation stops and is associated with loss of fertility. It may represent more than one third of the total female lifespan. It is characterized by the depletion of the follicles of the female ovary [1]. Postponing menopause is a hope and demand for many women, especially those who have attended higher education. They may miss the age of marriage for several reasons, including trying to choose a husband that matches the educational and cultural level of the female. Even married women who wish to postpone pregnancy may be affected by menopause. This may cause many problems for the woman, as well as for the husband or partner and all family members, and this may be reflected on their quality of life.

Deprivation of female hormones, especially estrogen, that occurs with the onset of menopause may be associated with some physical and psychological problems that significantly affect the quality of life. Psychological problems include nervous and mental disorders, hot flashes, sleep disturbances and mood disorders. In

addition to menstrual loss, physical health problems may include genital atrophy, shrinking breasts, loosening of the skin, reduced subcutaneous tissue, joint pain, decreased bone mass with increased incidence of osteoporosis, vaginal dryness and possibly a loss or decreased libido [2]. Therefore, it is important to discuss the possibility of using new cryopreservation technology to postpone menopause in order to alleviate its associated disorders and ensure better healthy lives for women and societies.

The ovary is the primary female gonad that is located one on each side of the uterus. It is suspended from the uterine cornu, located behind the broad ligament within the Douglas pouch. Ovarian procedures can be easily approached from the vagina through the Douglas pouch under the guidance of ultrasound examination. The ovary consists of two main areas; an external functional area called the cortex and an internal fibrovascular region known as the medulla. The cortex consists mainly of primary ovarian follicles at birth. After puberty and with each reproductive cycle, FSH and LH stimulate some of the primary follicles to grow. Only one of them

in most women (or sometimes two or more) reaches maturity and forms a mature graphian follicle. This follicle ruptures to release the 2nd oocyte, a process known as ovulation. Although this process consumes some follicles, the process of follicle consumption or degeneration continues in the ovarian cortex throughout the female fertile age, even during periods when the ovary is not working, such as pregnancy after the formation of the placenta or the use of contraceptives. pills [3,4]. The process of ovarian follicles' depletion is a continuous and steady process throughout the fertile female age till stage of menopause. At menopause, the ovaries lose the oocytes and shrinkage in size with more fibrosis and blurring in the disconnection between regions of cortex and medulla. The mechanism of loss of ovarian follicles is irreversible process because the oogonial stem cells are no longer found after birth [5]. The female has about 450 ovulatory cycles throughout her reproductive lifespan that begins at menarche and ends with the onset of menopause. During such age period, progressive loss of ovarian follicles occurs through cell death known as apoptosis [6].

Ovarian reserve represents condition of the ovarian follicles and potential ability of the female to get pregnancy. It has been investigated by the serum Anti-Müllerian hormone (AMH) that represents the best marker for ovarian function [7]. Low level of AMH is an alarm of low ovarian reserve; and the woman might be advised to attempt to be pregnant or try to postpone menopause to preserve fertility. Also, ovarian reserve might be tested by induction of ovulation by gonadotropins. Poor response to induction is an indication of reduced ovarian reserve and hence really occurrence of menopause. The ovarian follicles in human ovary that accounts about 701,000 at birth decreases to reach about 250,000 at sexual puberty. The ovarian reserve continues to diminish with progress of age to reach about 25,000 follicles at 37-38 years old [8]. It nearly disappears at age of menopause that varies from one woman to other but ranges from 45 to 55 years with mean age of 50-51 years. Therefore, the process of achieving ovarian cortex tissues is preferred to be performed at or before the age of 35 years after which marked drop of ovarian reserve might occur. Ovarian reserve varies from one woman to another; and depends on main factors including hereditary, diseases, exposure to radiation, administration of chemotherapy or drugs and other sentimental variables [4].

Ovarian tissue cryopreservation via -150 °C freezers with liquid nitrogen has been successfully used for rescuing the harvested ovary from damage that could be induced by chemo- or radiotherapy used in management cases of cancer. This procedure has been aimed to restore reproductive function and improve quality of life [2,9]. Removal of one ovary has been found to be of no mentioned impact on the function of the other intact ovary

or even the age onset of menopause [4]. Therefore, we suggest cryopreservation of some ovarian tissues during the fertile age. This might lead to rescuing the harvested ovarian tissues from degeneration or consumption occurring normally within the human body. Hence, such cryopreserved tissues might be replanted once again at/or around the age of menopause in order to postpone its age onset. This could be investigated in volunteers aiming to preserve endocrine function of ovary as long as possible.

Conclusion

Ovarian tissue cryopreservation may be offered as an option for young women who need to postpone menopause or extend their fertile life. This can be performed through laparoscopic autologous transplantation of cryopreserved ovarian cortical tissue at the expected date of onset of natural menopause. Prospective studies involving volunteers are recommended to investigate the possibility of extending the reproductive age of females for the good health of the wife and husband.

Acknowledgement

None.

Conflict of Interest

Author declares no conflict of interest.

References

1. Hegazy A (2014) Clinical embryology for medical students and post-graduate doctors. Lap Lambert Academic Publishing.
2. Hegazy AA (2020) Is there any mean to postpone the menopausal ovarian senescence? *Int J Fertil Steril* 13(4) :346-347.
3. Hegazy AA, Hegazy RA, Omar MM (2002) Light and electron microscopic study of the ovarian surface epithelium (OSE) of the adult albino rat. *Zagazig University Medical Journal (ZUMJ)* 8: 1351-52.
4. Hegazy AA (2020) Potentiality of postponing menopause through ovarian auto-graft transplantation. *J Gynecol Reprod Med* 4(2): 29-31.
5. Faddy MJ, Gosden RG, Gougeon A, Richardson SJ, Nelson JF (1992) Accelerated disappearance of ovarian follicles in mid-life: implications for forecasting menopause. *Hum Reprod* 7(10): 1342-1346.
6. Wallace WH, Kelsey TW (2010) Human ovarian reserve from conception to the menopause. *PLoS One* 5(1): e8772.
7. Moolhuijsen LME, Visser JA (2020) Anti-Müllerian Hormone and Ovarian Reserve: Update on Assessing Ovarian Function. *J Clin Endocrinol Metab* 105(11): 3361-3373.
8. Zaidi S, Usmani A, Shokh IS (2007) Ovarian reserve and reproductive age. *Pak J Med Sci* 23(3): 449-453.
9. Donnez J, Dolmans MM, Demylle D, Jadoul P, Pirard C, et al. (2004) Live-birth after orthotopic transplantation of cryopreserved ovarian tissue. *Lancet* 364(9443): 1405-1410.