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**The Relationship between Hysterectomy and Depression: *Avicenna's* Viewpoint**

Hysterectomy is the most common surgical procedure in non-pregnant women and the second common procedure, occurring post-cesarean section [1]. It is an effective solution for benign and malignant Gynecological pathologies causes Abnormal Uterine Bleeding (AUB) like Endometriosis, Adenomyosis, Leiomyoma, Uterine Polyps, and also malignant tumors such as Leiomyosarcoma [1]. In the United States, 600,000 women undergo hysterectomy every year [1], in which 75% of them are at the ages of 20-49 years old [2]. The usual complications of hysterectomy are physical and mental, including vaginal dryness, dyspareunia, changes in sexual activity such as decreased libido and also depression [3]. The World Health Organization (WHO), considers depression as one of the most commonly diagnosed diseases in the world, with the highest rates of ages between 25 to 44 years old [4]. The overall risk of sustained depression is more common in women [4]. On the other hand, many recent studies have shown strong evidences of post-hysterectomy depression [5]. PM, is one of the most important branches of Complementary and Alternative Medicine (CAM), rooted in more than seven thousand years ago, studied by outstanding scientists especially those who lived in the golden age of Islam (9th to 13th century A.D) such as *Avicenna* (980-1037 A.D ([6]. It plays an important role in prevention and treatment of diseases from the past to the present [6]. According to the holistic viewpoint of PM, the human body is made up of four main substances called “Humor” (*Khelt*), each of which has a unique temperament (*Mizaj*), and on the basis of temperament, they play certain roles in the body [7]. As other PM philosophies, *Avicenna* believed that the balance of these four humors lead to health and imbalance of each one, in quality, quantity, or both causes various types of disease, classified as a category named "*Su-e-Mizaj*" (Substantial Dystemperament)[7, 8]. *Avicenna* emphasized that concurrent with normal menstruation cycle, some amount of waste materials are removed from the body and if the menstruation cycle does not happen, they will accumulate and cause multiple complications in different organs, Including Gastrointestinal (GI) tract, Respiratory tract, Uterus, Liver, Kidney and especially Central Nervous System (CNS) [8]. *Avicenna*, in his well-known book Canon, (*Al-Qanoon- fi -Al-Tibb*), has been pointed out the neurological complications such as depression with the term “*Melancholia*” [8]. Cleansing the body from waste materials through urine, stool, sweating and menstruation (in women), accompanying with preserving essential substances, are the two important items from six essential principles of a healthy lifestyle in PM which known as “*Setteh-e-zarurieh*” [9].
  According to this, if what is to be repelled remains, the natural body temperature affects the residual materials and rotten them, and by releasing these corrosive substances in the body, these can lead to serious harms. The nature of our body tries to preserve the balance by eliminating waste, and menstruation cycle, as a natural cleansing method, has a special role in women of reproductive age [9]. *Avicenna* believed that if normal menstruation cycle, as a natural way to clean up the body, is disrupted for any reason, the physician should use alternative purging interventions to prevent depression, and if depression occurred, prevent its progression [8]. Important *Avicenna’s* recommendations in this regard include the following:

Lifestyle modification, especially exercise and physical activity, regulating the bedtime, have a proper diet, improve digestion especially by focusing on constipation, accurate counseling to solve psychological problems before and after
hysterectomy and at last using interventions [8]. The Venisection (*Fasd*), Wet cupping (*Hijamat*) and Leech therapy are various manual interventions known in PM as “*Amal-e-Yadavi*”, that have been used frequently [9]. As in *Avicenna’s* manuscripts, venisection is a most effective method of treatment and a way to prevent the accumulation of waste materials in the body, following hysterectomy [8]. Although the onset of hysterectomy-induced depression based on the PM training is quite expected, this finding has not yet been conclusively proven. If this hypothesis is supported by future researches, the recommendations of PM could be a good suggestion for treating or preventing post hysterectomy depression.

**References:**

1- Dehghani A, Ahmadpour F. An Investigation of Epidemiology and Causes of Total Abdominal Hysterectomy in Motahari Hospital of Marvdasht during a 5 years Period .2015

2- Kazemi A, Homayoni M, Sabohi F. Comparison of life in women with a hysterectomy and hormonal therapy due to abnormal uterine bleeding.jmj.2013,11(4):59-65

3- Saeidi M, shamsalizadeh N, Yousefi F. The effectiveness of cognitive behavior therapy on sexual dysfunction after hysterectomy in women referred to Besat hospital in Sanandaj. Winter 2017.vol.3.No.4

4- Bieniasz J, Zak T, Laskowska-Zietek A, Noczyńska A. Causes of menstrual disorders in adolescent girls-a retrospective study. Endokrynol Diabetol Chor Przemiany Materii Wieku Rozw. 2006; 12(3):205-10.

5- Modarres M, RahimikianF, Mehran A, Impact of Pre- Hysterectomy Counseling on Depression among Patients Referred to TUMS Hospitals.2013;19(2):40-50.

6- Zargaran A. Ancient Persian medical views on the heart and blood in the Sassanid era (224-637 AD). *I J Card*. 2014; 172(2): 307-12.

7- Arzani MA. Mofarreh al gholoub (Ghanounche dar teb Analysis). Institute of medicine's history, Islamic and complementary medicine Studies, Iran's University of medical sciences. Tehran's Kashmirian lithograph, Lahore, 1333 AH

8- Avicenna H. Canon of Medicine [*Al-Qanoon fi Al-Tibb*]. Tehran, Iran: Aligholikhan Press; 1880, 3rd Vol, p.75, 76. [In Arabic]

9- Araj Khodaei M, Ghaffari F, Emadi F, Emaratkar E, Alijaniha F, Noorbala A, Naseri M. Healthy lifestyle in prevention and Treatment of Depression from the view of Iranian Traditional Medicine

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