



Mood Changes in Premenstrual Syndrome seen from Hormonal Changes in the Pituitary Gland

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ABSTRACT

Introduction: The pituitary gland plays a role in the production of the hormones FSH and LH, which influence development follicles And process ovulation. In addition, the pituitary gland indirectly plays a role in regulating the production of serotonin, a neurotransmitter role in arrange atmosphere heart. This research aims to find out about the role of the pituitary gland in mood changes during the premenstrual period.

Methodology: This research uses a literature study method by examining existing data.

Results: Research results show that change atmosphere liver in the premenstrual phase can caused by change hormonal, like decline production serotonin consequence decreasing rate hormone estrogen and progesterone, which influence mood and emotions.

Discussion: The pituitary gland has a role in influencing the ovulation process in the premenstrual phase and also regulates serotonin production which causes an imbalance in the hormones produced by the ovaries, namely estrogen and progesterone, resulting in mood swings.

KEYWORDS: gland pituitary, mood swings, premenstruation.

INTRODUCTION

Change atmosphere heart is something a common condition experienced by almost everyone individual. According to Stephen Robbins, change atmosphere heart or *mood swing* is feelings Which tend not enough intense Which caused by situation And condition Which experienced by individual. Atmosphere heart can appear in a way suddenly And No expected, even can influence method person think as well as Act every the day. Reason from Mood changes are influenced by two The main factors are internal and external factors according to (Devine et al, 2010) is situation, *thought patterns*, *organs of experience*, *response patterns*, And environmental situation social. To get in a good mood, individual need get condition, situation, And environment Which own positive *vibes* . It is also important to understand the role of the gland pituitary in change atmosphere liver during premenstruation, remember gland the pituitary regulates secretion various hormone Which influence emotion And behavior (Lakanwal, 2023). Hormone Which produced by gland pituitary, like *luteinizing hormone* (LH) and *follicle-stimulating hormone* (FSH), role in arrange production hormone sex (estrogen And progesterone), which is direct affect function reproduction And atmosphere heart. During phase luteal, which lasts from ovulation to menstruation, production progesterone And estrogen increase in lower influence secretion LH And FSH from gland pituitary. Fluctuation hormones This can affect neurotransmitters brain like serotonin And dopamine, Which is an important component in setting the atmosphere heart.

Decline rate estrogen And progesterone suddenly before menstruation can causes symptoms of *Pre Menstrual Syndrome* (PMS) like depression, worry, easy offended, And fatigue. Each hormone from pituitary This have function Which Specific Which can influence physiological functions of the body. Understand the mechanism Hormones and the role of the pituitary gland in change atmosphere heart moment premenstruation important For develop approach more effective therapeutics in the treatment of PMS (Ramadhani, 2023). By Because That 's research more carry on about interaction gland pituitary with hormonal changes in the menstrual cycle can give outlook new For improve the quality of life of women who experience it PMS.



METHOD STUDY

This research is a literature study research from several journal articles for identify connection between activity gland pituitary, fluctuation hormonal, And mood swings in women at times premenstruation. Studies literature in this research nature descriptive-analytical. Literature study is a research method Which involve collection, assessment, and analysis of data from relevant literature topic Which researched.

RESULTS AND DISCUSSION

The aim of this research is to understand the mechanism of mood changes in premenstrual syndrome (PMS) by studying the hormonal changes that occur in the pituitary gland. Premenstrual syndrome is a condition that many women suffer from and often has a significant impact on their quality of life. Premenstrual mood swings can cause stress, anxiety, and depression, which negatively impact psychological and social well-being. The pituitary gland plays an important role in regulating hormones that affect the menstrual cycle and mood. This research aims to explain the relationship between hormonal fluctuations regulated by the pituitary gland and mood fluctuations during PMS. Understanding the mechanisms of these hormones is expected to provide deeper insight into the causes of PMS, help develop more effective management strategies, and contribute to the fields of reproductive health and clinical psychology.

This research also aims to provide a scientific basis for the development of more effective medical and psychological interventions and to increase awareness of the importance of comprehensive PMS treatment. Therefore, this research will help improve the quality of life of women suffering from PMS by providing a deeper understanding of relevant biological and psychological factors. Research This show that there isthe relationship between premenstruation and change atmosphere heart. Test analytic Which done previously by Arifin, Trisiswati, & Marhamah (2022) uses chi-square correlation used to determine the relationship between syndrome premenstruation with changeregulations emotion on student FacultyMedical YARSI force 2020 produces a p-value $p= .0004$. Based on The results obtained proved that there was a relationship between syndrome premenstruation with change regulations emotion on student force YARSI Faculty Medical University force 2020.

Theory neurotransmitters explain that imbalance chemical in brain role in mood swings. In context PMS, hormonal fluctuations regulated by the glands The pituitary influences the neurotransmitter system,so that give rise to symptom emotional. Serotonin Imbalance: Serotonin iskey neurotransmitters that regulate mood heart. Imbalance in serotonin levels due tochange hormonal can cause premenstrual symptoms of depression and anxiety. Dopamine Regulation : *Dopamine* plays a role in motivation And flavor like (Lakanwal, 2023).

Pituitary is gland size small However have function Which important And complex. That's why it's also called the pituitary as "*Master Gland*" (Lakanwal, 2023). This gland is divided into two main parts: lobe anterior (*adenohypophysis*) And lobeposterior (neurohypophysis), Which each each produce hormone different And own function certain. Every part consists from three part. Neurohypophysis produce vasopressin And oxytocin, whereasadenohypophysis produce six typehormone: hormone stimulation thyroid (TSH), FSH, GH, LH, corticotropin, and prolactin. Pituitary is gland size small However have function Which important And complex. Because of this, the pituitary is also called as "*Master Gland*" (Lakanwal, 2023). This gland is divided into two main parts: lobe anterior (*adenohypophysis*) And lobeposterior (neurohypophysis), Which each each produce hormone different And own function certain. Every part consists from three part. Neurohypophysis produce vasopressin And oxytocin, whereasadenohypophysis produce six typehormone: hormone stimulation thyroid (TSH), FSH, GH, LH, corticotropin, and prolactin.

Hypothalamus control hormone pituitary anterior via the Hypothalamus-Pituitary-Axis and *feedback* negative from target the organ. Hormone pituitary posterior synthesized in hypothalamus And Then released to pituitary posterior through tract hypothalamohypophyseal, Also known assupraopticohypophyseal, For Then released to circulation systemic. Each each from hormone pituitary This do task certain Which impact on function body physiology. Changes in a woman's mood when entering period premenstruation own linkages with hormones Which generated by gland pituitary.

Gland pituitary is gland Whichlocated in lower brain And produce a number of hormone Which influence cycle menstruation (Lakanwal, 2023). The hormone between other *Luteinizing Hormones* (LH) And *Follicles Stimulating Hormones* (FSH). Both hormones the role as producer ovulation as well as stimulating ovaries For encourages the production of estrogen and progesterone. In the premenstrual period, LH, FSH, estrogen And progesterone experience release Which inhibited by cortisol. This is caused by secretion ACTH Which stimulating gland adrenals Then increase production cortisol. The increase in cortisol becomes causes



changes in mood and emotions on woman on period premenstruation so that can cause PMS.

PMS or *Pre Menstrual Syndrome* is condition Which experienced by Lots woman before menstruation. Be marked with symptom physique And emotional, PMS caused by change hormonal Which significant Which happen in body woman during cycle menstruation they (October & Makassar, 2023). The menstrual phase generally occurs in cycle 28 day. On condition normal, there isthree phase Which happen during cycle 28 day the, namely:

1. Phase follicular
2. Phase ovulation
3. Phase luteal

On beginning phase follicular, estradiol And progesterone is at on condition Lowest so that trigger Hypothalamus For release *gonadotropin-releasing hormones* (GnRH). GnRH then stimulates secretion FSH and LH hormones by the anterior pituitary. FSH works For stimulate growth follicles and LH which function to maintain cellsegs and follicles. In the ovulatory phase, cellsThe egg exits the follicle to wait for the sperm fertilize (Itriyefa, 2022).

Remainder network follicles become gland Which secrete hormones, that is *luteum corruption* (body yellow). On phase This, hormone estrogen And progesterone has increased prepare womb when cell egg fertilized. If Then No There is cell sperm Which fertilize,so hormone estrogen And progesterone will decrease. Decline hormone estrogen And progesterone here it is Which cause cell egg And wall womb shed or Which called as "menstruation". Decreased levels the hormones estrogen and progesterone will stimulate hypothalamus For release GnRH, And cycle even repeated.

Rate estrogen in body down after ovulation. This decrease has an impact on levels serotonin, that is neurotransmitters Which very important For arrange emotion, atmosphere heart, appetite, and sleep as well as various processes other biologicals (Himaya, Sa'adi, and Herawati, 2021). Serotonin Also help arrange various process biological And influence well-being emotional. Besides change hormonal, stress Also contribute on PMS Which more critical. Stress period long increase rate hormone cortisol, Which can reduce serotonin And dopamine in brain, Which is neurotransmitters other Which important For atmosphere heart And motivation. When stress lower rate serotonin And dopamine, symptom PMS can become more critical. These symptoms include changes mood, fatigue, changes in appetite Eat, And Also disturbance Sleep. With say other, this stress No only can trigger PMS, but it will also make the symptoms worse (Sinaga, 2022).

Hormone serotonin And hormone FSH own role Which different in body And No directly related to each other. They play different roles in body systems, with serotonin playing a role in regulation Mood and FSH play a role in the cycle reproduction woman. Erratic emotional changes in during menstruation can be caused by several factor, Wrong the only one is because increased levels of estrogen and progesterone in the blood (Bachtum, 2019).

Rate estrogen Which increase can bother process chemistry in body including vitamin B6 Which known as vitamin anti depression And works in controls serotonin production (Himaya, Sa'adi, and Herawati, 2021). Level serotonin Which balanced can help guard balance emotional And mentally somebody. Decline level serotonin has related with PMS symptoms, such as anxiety, irritability, and changeability mood.

Some experts argue that PMS can occurs due to a decrease in serotonin levels body. Although change rate serotonin can influence mood and emotions, thus having an impact on quality of life and health in a way whole, change the No relate direct with function FSH in cycle reproduction woman. Further research may be needed to understand more deeply the interactions between hormones serotonin And hormone FSH in context health reproduction And well-being woman.

A decrease in estrogen levels can cause decline activity dopamine, Which can resulting in low mood and anhedonia (loss of interest or pleasure). Modulation GABA: Progesterone influence system GABA, neurotransmitters Which role in reducing anxiety. Level fluctuations progesterone can bother effect GABA, thereby increasing the risk of anxiety and premenstrual irritability. Change atmosphere heart on period premenstruation can be explained through interactions between hormone Which arranged by gland pituitary and neurotransmitters. Hormonal fluctuations estrogen And progesterone influence balance of neurotransmitters such as serotonin, dopamine, and GABA, which contribute to symptom emotional Which often experienced woman during phase luteal. Understanding about connection This can help in development strategy treatment For overcome PMS, including therapy hormone, treatment with *serotonin reuptake inhibitors* (SSRIs), and other interventions Which target system neurotransmitters. By understanding the biological mechanisms behind change atmosphere heart premenstruation, We can improve women's quality of life experience symptoms This.



CONCLUSIONS AND SUGGESTIONS

Gland pituitary play role important in arrange change atmosphere heart during period premenstruation through its influence to hormone reproduction. During cycle menstruation, gland pituitary secretes hormones such as FSH and LH which influences the production of estrogen and progesterone by ovaries. Fluctuation rate hormone This influence system neurotransmitters in brain, including serotonin, dopamine, And GABA, Which role in arrangement atmosphere heart. During phase luteal from cycle menstruation, decline rate estrogen And change rate progesterone can cause imbalance neurotransmitters. Decline serotonin can cause symptom depression And worry, decline activity dopamine can reduce motivation and causes low mood, temporary change in modulation GABA can cause enhancement worry And irritability. Understanding about interaction between gland pituitary, hormone, And neurotransmitters give outlook Which important in explain symptom emotional Which experienced during period premenstruation.

Approach Which holistic in handle symptom premenstruation Which involve change atmosphere heart can more effective. Integration between hormonal therapy, cognitive therapy- *behavioral*, and lifestyle changes such as diet Healthy, sport regular, And management stress can help reduce symptom. Knowledge This can help in develop strategy treatment Which effective, such as hormone therapy and medications Which target system neurotransmitters, For reduce symptom PMS And increase quality life woman Which experience condition This.

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