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**MATRIC NUMBER: 18/MHS02/042**

**DEPARTMENT: NURSING**

**COURSE CODE: PHS 212**

**BREASTS**

Each month women go through changes in the hormones that make up the normal menstrual cycle. The hormone oestrogen is produced by the ovaries in the first half of the menstrual cycle. It stimulates the growth of milk ducts in the breasts. The increasing level of oestrogen leads to ovulation halfway through the cycle. Next the hormone progesterone takes over in the second half of the cycle. It stimulates the formation of the milk glands. These hormones are believed to be responsible for the cyclical changes that many women feel in their breasts just before menstruation. These include swelling, pain and soreness.

During menstruation, many women also changes in breast texture. Their breast may feel very lumpy. This is because the glands in the breast are enlarging to get ready for a possible pregnancy. If pregnancy doe not happen, the breasts goes back to normal size. Once menstruation starts, then cycle begins again.

**Causes of premenstrual breast swelling and tenderness**

Fluctuating hormone levels account for episodes of premenstrual breast swelling and tenderness. Your hormones rise and fall during a normal menstrual cycle. The exact timing of the hormonal changes varies for each woman.

***Oestrogen*** causes the breast duct to enlarge.

***Progesterone*** production causes the milk glands to swell.

Both of these events can cause your breast to sore.

Oestrogen and progesterone both increase during the second half of the cycle- days 14 to 28 in a typical 28-day cycle. Oestrogen peaks in the middle of the cycle, while progesterone levels rise during the week before menstruation.

**VAGINA**

This is a short tubular organ, it is lined by mucus membrane, which is formed by the stratified epithelial cells

* **Secretory phase:** vaginal epithelium proliferates due to actions of progesterone. It is also infiltrated with leukocyte.
* **Proliferative phase:** epithelial cells of vagina are confined, changes from cuboidal to stratified type. The stratified is more resistant to trauma and infection. Oestrogen is responsible for that.

These two changes increase the resistance of vagina for infection

**MENSTRUAL CYCLE**

**Menstruation** is the shredding of the lining of the uterus(endometrium) accompanied by bleeding. It occurs in approximately monthly cycles throughout a woman’s reproductive life, except during pregnancy. Menstruation starts during puberty (at menarche) and stops permanently at menopause

***Menstrual cycle*** begins with the first day of bleeding, which is counted as day 1. The cycle ends just before the next menstrual period. Menstrual cycles normally range from about 25to 36 days. Only 10 to 15% of women have cycles that are exactly 28days. Also, in at least 20% of women, cycles are irregular. That is, they are longer or shorter than the normal range. Usually, the cycles vary the most and the intervals between periods are longest in the years immediately after menstruation starts (menarche) and before menopause.

Menstrual bleeding lasts 3 to 7 days averaging 5 day. Blood loss during a cycle usually ranges from ½ to2 ½ ounces. A sanitary pad or tampon, depending on the type, can hold up to an ounce of blood. Menstrual blood, unlike blood resulting from an injury, usually does not clot unless the bleeding is heavy.

The menstrual cycle is regulated by hormones. Luteinizing hormones and follicle- stimulating hormone, which are produced by the pituitary gland, promote ovulation and stimulate the ovaries to produce oestrogen and progesterone. Oestrogen and progesterone stimulate the uterus and breasts to prepare for possible fertilization.

**The menstrual cycle has three phases:**

* **Follicular (before release of then egg)**
* **Ovulatory (egg release)**
* **Luteal (after release)**

The menstrual cycle begins with menstrual bleeding (menstruation), which marks the first day of the follicular phase also known as the proliferative phase. When the **Follicular phase** begins, levels of oestrogen and progesterone are low. As a result, the top layers of the thickened lining of the uterus(endometrium) break down and are shred, and menstrual bleeding occurs, about this time the follicle stimulating hormones level increases slightly, stimulating the development of several follicles in then ovaries. Each follicle contains an egg. Later in this phase, as the follicle- stimulating hormone level decreases, only one follicle continues to develop. This follicle produces oestrogen.

**The Ovulatory phase** begins with a surge in luteinizing hormone and follicle-stimulating hormone levels. Luteinizing hormones stimulates egg release (ovulation), which usually occurs 16 to 32 hours after the surge begins. The oestrogen level decreases during the surge, and then progesterone level starts to increase.

During **the Luteal phase**, luteinizing hormone and follicle-stimulating hormone levels decrease. The ruptured follicle closes after releasing the egg and forms a corpus luteum, which produces progesterone. During most of this phase, the oestrogen level is high. Progesterone and oestrogen cause the lining of the uterus to thicken more ton prepare possible fertilization.

If the egg is not fertilized, the corpus luteum degenerates and no longer produces progesterone, the oestrogen level decreases, the top layers of the lining break down and are shed, and menstrual bleeding occurs (the starts of a new menstrual cycle)

If the egg is fertilized, the corpus luteum continues to function during early pregnancy. It helps maintain the pregnancy.

**SYMPTOMS**

* Headache
* Acne
* Bloating
* Tiredness
* Mood changes
* Food cravings
* Breast soreness
* Diarrhea

**PROBLEMS THAT OCCURS DURING MENSTRUATION**

Problems with periods can include heavy bleeding, period pain (also called dysmenorrhoea), unpredictable or irregular periods and premenstrual syndrome, or PMS, which makes some women feel irritable and sad and can cause bloating, tender breasts and aching.

**ABNORMAL MENSTRUATION**

Typically, menstruation periods last four to seven days. Examples of menstrual problems include periods that occur less than 21 days or more than 35 days apart, missing three or more periods in a row, and menst5rwaul floe that is much heavier or lighter than usual.

Most women have menstrual periods that last four to seven days. A woman’s period usually occur every 28days, but normal menstrual cycles can range from 21days to 35days.

**Examples of menstrual problems include:**

* Periods that occur less than 21 days or more than 35 days apart
* Missing three or more periods in a row
* Menstrual flow that is much heavier or lighter than usual
* Periods that last longer than seven days
* Periods that are accompanied by pain, cramping, nausea or vomiting
* Bleeding or spotting that happens between periods after menopause or following sex.

**Examples of abnormal menstruation includes the following:**

* **Amenorrhea** is a condition in which a woman’s period have stopped completely. The absence of a period for 90daysor more is considered abnormal unless a woman is pregnant, breastfeeding or going through menopause (which generally occurs for women between ages 45 and 55). Young women who haven’t started menstruating by age 15 or 16 or within three years after their breast begins to develop are also considered to have amenorrhea.
* **Oligomenorrhea** refers to the period that occur infrequently.
* **Dysmenorrhea** refers to painful periods and severe menstrual cramps. Some discomfort during the cycle is normal for most women.
* Abnormal uterine bleeding may apply to a variety of menstrual irregularities, including a heavier menstrual flow, a period that lasts longer than seven days or bleeding or spotting between periods, after sex or after menopause.

**CAUSES OF ABNORMAL MENSTAUTION**

There are many causes of abnormal periods, ranging from stress to more serios underlying medical condition.

* **Stress and lifestyle factors:** gaining or losing significant amount of weight, dieting, changes in exercise routines, travel, illness or other disruptions in a woman’s daily routine can have an impact on her menstrual cycle.
* **Birth control pills:** most birth control pills contain a combination of hormones oestrogen and progestin (some contain progestin alone). The pills prevent pregnancy be keeping the ovaries from releasing eggs. Going on and off birth control pills can affect menstruation. Some women have irregular or missed periods for up to six months after discontinuing birth control pills. This is an important consideration when you are planning on conception and becoming pregnant. Women who take birth control pills that contain progestin may have bleeding between periods.
* **Pelvic inflammatory disease:** pelvic inflammatory disease (PID) is a bacterial infection that affects the female r4eproductive system. bacteria may enter the vagina via sexual contact and then spread to the uterus and upper genital tract. Bacteria might also enter the reproductive tract via gynaecologic procedures or through childbirth, miscarriage, or abortion. Symptoms of PID include a heavy vaginal discharge with an unpleasant odour, irregular periods, pain in the pelvic and lower abdominal areas, fever, nausea, vomiting or diarrhea.
* **Premature ovarian insufficiency:** this condition occurs in women under age 40 whose ovaries do no function normally. The menstrual cycle stops, similar to menopause. This can occur in patients who are being treated for cancer with chemotherapy and radiation, or if you have a family history of premature ovarian insufficiency or certain chromosomal abnormalities.

**Other causes of abnormal menstruation include:**

* Uterine cancer or cervical cancer
* Medications such as steroids or anticoagulant drugs (blood thinner)
* Medical conditions, such as bleeding disorders an under or overactive thyroid gland, or pituitary disorders that affect hormonal balance
* Complications associated with pregnancy, including miscarriage or an ectopic pregnancy (fertilized egg is implanted outside the uterus; for example, within the fallopian tube).