

Quality of life in women after menopause

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Abstract

Over the last few years prolonging of an average life span of women in the majority of population has been observed. The average age of life span of a Polish woman was 81 years in 2012. The menopause takes place more or less in the 51st year of age at the average. Thus, the period after menopause is around 30 years long, which is over one third of a whole life span. The last menstruation is preceded by many characteristic hormonal changes which lead to inhibiting ovaries' hormonal activity which is described as premenopause. Changes accompanying the menopause concern first of all a decrease in ovarian synthesis of oestrogens, progesterone, ovarian androgens (testosterone and androsterone), and of adrenal dehydroepiandrosterone and its sulphate. Climacteric symptoms and frequent occurrence of many systemic diseases negatively affecting one's mental condition and self-esteem may lead to depression and worsening of a relationship with a partner and with an environment, which, in turn, significantly worsens the quality of life. Maintaining the quality of life after menopause is enhanced both by pharmacological treatment, namely hormone therapy and by alternative methods: the appropriate lifestyle or active sexual life. A gynaecologists play an important role in maintaining the quality of life, because they help the woman take the decision of introducing hormonal therapy.

INTRODUCTION

Over the last few years prolonging of an average life span of women and men in the majority of populations has been observed. According to the data of The Central Statistical Office, the average age of Polish women's life span was 78 years in the year 2000, and 81 years in 2012. Thus, the period after menopause is around 30 years long, which is over one third of the whole life span. The menopause concerns mature women with a stable professional status and family burdens smaller than before which gives a further opportunity of self-fulfilment. Maintaining the highest quality of life

possible in this period difficult for many women brings social and individual benefits. In 1994, the World Health Organization (WHO) worked out a following definition of the quality of life: "Quality of life is individuals' perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns." The WHO considers the following elements affect the quality of life: a physical health, mental condition, social relationships, religion, beliefs, environment, convictions, and ideas (WHOQOL 1995). Thus, the quality of life is a complex way of evaluating by an individual their physical health, emotional condi-

tion, self-reliance, and a level of independence of an environment, as well as a relationship with an environment, and personal beliefs and convictions (Michalak *et al.* 2009).

INFLUENCE OF REPRODUCTIVE SYSTEM ON EMERGING MENOPAUSAL COMPLAINTS

At women, the reproductive system gets old much faster than other systems of the body (Tatone *et al.* 2008). Changes accompanying the menopause concern first of all a decrease in ovarian synthesis of oestrogens, progesterone, ovarian androgens (testosterone and androsterone), and of adrenal dehydroepiandrosterone and its sulphate. The menopause ends the reproductive period. It takes place in the age of 46–52 years, usually in the 51st year of age at the average (Faddy *et al.* 2014; Hall 2004). A particular age of the menopause is influenced by, among others, genetic factors. It is estimated that their influence accounts for 31–87% (Treloar *et al.* 1998; de Bruin *et al.* 2001). The last menstruation is preceded by many characteristic hormonal changes which lead to inhibiting ovaries' hormonal activity which is described as premenopause. It lasts 5–6 years on the average. In the perimenopausal period, symptoms are highly differentiated (Table 1). It is estimated that as many as 85–89% of women feel menopausal symptoms (Pertyński *et al.* 2001).

A cohort research resulted in differentiated conclusions concerning the evaluation of a frequency of par-

ticular menopause symptoms. Practitioners speak of a menopausal syndrome, which begins with menstrual cycle disorders manifesting by shortening or prolonging of a cycle length, as well as by irregular, often abundant bleeding, which are called climacteric symptoms. In this period, it is vital to differentiate irregular menstruation from abnormal bleeding, and to exclude pathological conditions in the uterus and in adnexa following a medical history, clinical and ultrasound examination of the reproductive organ, and sometimes a histopathological examination.

Pelvic organ prolapse, urine incontinence are the next problem causing a significant decrease of the quality of life in the perimenopausal period. In Poland, this problem concerns 33% of women of this age (Pertyński *et al.* 2005). A low oestrogens' concentration plays an important role in the aetiology of the above complaints (Blok & Holstege 1998). Oestrogens' receptors have been found not only in urine tracks and muscle-fascia structures of the pelvic floor but also in the cortical centre responsible for micturition: in the pons where the micturition control centre is located, and in the hypothalamus area where centres regulating urination are located. Postmenopausal oestrogen deficiency may also increase detrusor muscle's activity. It has been shown upon animal models that oestrogens hinder the activity of the detrusor muscle by regulating the muscarinic receptors' density. The low oestrogens' concentration results in many changes of the atrophic character. Genital tracks atrophy worsens a condition of lower urinary tracks and mechanisms responsible for urinary continence. Oestrogens' deficiencies may also influence disturbances of mechanisms protecting the lower part of the urinary-genital track from a pathogenic microbial colonization by decreasing the content of glycogen in vaginal epithelium cells. This hinders maintaining a production of the lactic acid on an appropriate high level by the *Lactobacillus spp.* strain. The production has a protective effect on maintaining the right vaginal biocoenosis. Because of anatomic factors inflammatory conditions in the vagina are frequently accompanied by chronic infections of lower urinary tracts.

Sexual functions' disorders and lowered interest in sexual life at women after the menopause are observed relatively frequently. It is estimated that in ten years after the last period over 80% of sexually active women complain about libido disorders (Oldenhave 1994). This phenomenon is due to a lowering of an oestrogen concentration, vaginal dryness, narrowing of vagina, shortening of vagina, and a loss of its flexibility. In a gynaecological exam, a vaginal fornices is obliterated, and a mucous membrane is pale pink, frequently with petechiae. This condition is the reason of a significant sensitiveness to injuries, which results in dyspareunia, more frequent vagina inflammation as well as shortening and lowering of intensity of orgasm or a lack of orgasm.

Tab. 1. The most frequent symptoms of oestrogens' deficiency.

Scope	Symptoms
vascular and motor	hot flashes, headaches, night sweats
mental	sensation of fatigue irritability and concentration disorders, mood swings, depression weakening of memory sleep rhythm disorders
urinary and sexual	vaginal dryness, dyspareunia, pruritus atrophic vagina inflammation recurrent urinary tract infections, statics genital disorders and urine incontinence spotting, bleeding, leucorrhoea
of connective tissue	increased activity of the sebaceous and sweat glands pain in the joints, bones, osteoporosis pain in the backbone weight gain
of soft tissues	decrease of volume of the pectoral gland thinness of skin, decrease of flexibility tingling sensation
sexual	problems with reaching orgasm, dyspareunia decreased libido

In the perimenopause period, the following mental disorders may take place: mood swings, dejection, nervousness, annoyance, difficulties in coping with stress of everyday life, lowered concentration, weakening of memory or even depression (Pertyński *et al.* 2007).

THE MOST FREQUENT DISEASES

Climacteric symptoms, and frequent occurrence of many systemic diseases negatively affecting one's mental condition and self-esteem may lead to depression and worsening of a relationship with a partner and with an environment, which, in turn, significantly worsens the quality of life. Hormonal changes in the menopausal period favour disorders of several metabolic pathways. Dyslipidemia, impaired glucose tolerance, insulin resistance, hyperinsulinemia, and type 2 diabetes mellitus are frequently observed (Fait & Vrablik 2012). In this period, slowing down of metabolism leads to an increase of body weight and disturbances of the digestive system. It is estimated that 2/3 of postmenopausal women have overweight or obesity (Pertyński *et al.* 2007). The lazy bowel syndrome occurs, which is the consequence of a lack of physical activity and of bad eating habits. Other pathologies that often accompany the perimenopausal period are the cardiovascular diseases and neoplasms. Thus, it is vital to undergo periodic preventive screenings which allow early detection of many pathologies and a successful treatment. In Poland, the following screening are conducted among perimenopausal women: cervical smear once per 3 years, mammography once per 2 years from 50 to 70 years of age, and colonoscopy once in a lifetime. Unfortunately, the implementation of this prevention in Poland is insufficient. According to the data of Izdebski's report: "Sexuality of the Poles 2011", only 56% of women in the age 50–59 visit a gynaecologist at least once a year, 55% examine their breast (on their own or at a doctor's), and 42% of women have a cervical smear done once a year. As many as 59% of women in the age 15–59 never does a breast ultrasound examination. The same percentage of women do not do a mammography.

POSSIBILITIES OF TREATMENT

From the gynaecologist point of view, possibilities of treatment which may enhance maintaining the quality of life after the menopause are treatments of any reproductive system pathology. Diagnosis and treatments of abnormal bleeding from the genital track, as well as administrating hormonal treatments are an important element of this general treatment dedicated to maintain the quality of life. More detailed diagnosis, i.e. ultrasound, diagnostic hysteroscopy or an abrasion of a cervical canal and uterine cavity and further histopathological diagnosis are an important element enabling an early detection and treatment for many serious pathologies.

PHARMACOLOGICAL TREATMENT

In case of irregular, abundant menstrual bleeding, a substitution of phase II with progestins or hormonal contraception is the best choice of treatment once pathology of the uterus and adnexa have been eliminated. Low-dose sequential hormonal therapy with gestagen predominance may be an alternative, with the reservation that this therapy is not contraceptive.

Hormonal therapy (HT) plays an important role in maintaining the quality of life of women after menopause, mainly because of effectiveness of treating the climacteric symptoms. The best moment to begin HT comes once the first clinical symptoms of oestrogen deficiency are observed. HT may be applied as a therapy of oestrogens only or as a combination of oestrogens and progestins. The Polish Gynaecological Association recommends applying progestogens and estrogens, fixed combinations, in a treatment for intensified climacteric symptoms, consequences of urogenital atrophy, osteopenia and osteoporosis in a pre- and perimenopausal period (Pertyński 2004). When qualifying a patient for HT all indications and contraindications for this kind of therapy should be considered, and a treatment should be administered under a constant medical supervision. Undiagnosed abnormal bleeding of the genital track, severe liver damages, estrogen-dependent cancers (breast cancer and endometrial cancer), active thromboembolic disease, refractory severe hypertension, and inherited metabolic diseases are absolute contraindications for HT. In a perimenopausal period, applying sequential HT, imitating a natural menstrual cycle, is the method of choice. According to the recommendations of the Polish Gynaecological Association, hormonal treatment should be begun with the smallest doses of oestrogens (and, possibly, progestins) (Pertyński 2004). According to the standards of the low-dose therapy, the following daily doses of oestrogens are administered: 1 mg/day orally; 25 g/day percutaneously.

The oral route is the most frequent way of administering HT. At present, half smaller doses of orally given hormones are administered. It is so called ultra-low-dose HT (uldHT). In case of oestrogens it is of a particular importance because oestrogens given this way are thought to increase the risk of thromboembolic complications. Introducing uldHT to common use may on one hand increase the safety of its usage, and on the other hand there is a worry whether small doses of hormones are going to be satisfactory to treat climacteric symptoms.

As it has already been mentioned, urinary incontinence is a complaint which significantly lowers the quality of life. Because of the fact that almost 74% of cases of incontinence is due to effort surgical treatment plays a huge role as it restores the right functioning of the lower part of the urinary tract (Prajsner 2001). In some cases, conservative treatment allows to avoid the

surgical procedures. Conservative treatment includes: physiotherapy, mechanical means (pessaries, special tampons), change of lifestyle (obesity treatment, avoiding constipations), pharmacological means (anticholinergic drugs, β -agonists and vaginal oestrogen therapy). Oestrogen preparations are also used in treatment for stress incontinence and for sudden urges to urinate, and they affect a few mechanisms because:

- they restore the right pulsation of vessels in submucosal plexus of the urethra; and the increase of pressure closing the urethra;
- they influence pressures' transmission to the proximal urethra;
- they increase a sensitivity threshold of the detrusor muscle;
- they increase the number of adrenergic receptors in the urethra (Stachowiak 2005).

Oestrogens given vaginally (including both estradiol and estradiol) decrease a probability of inflammation of the urinary track more than twice. This way of giving eliminates a possibility of occurrence of many systemic activities. Their local application leads to a quick cure of vagina atrophy. A number of cells of the superficial vaginal epithelial increases, the thickness of epithelium and its vascularisation increase, the normal pH of the vagina is restored. Similar changes take place in the epithelium of lower urinary track. Many international societies have worked out guidelines of criteria of evidence based medicine. According to the guidelines, administering low-dose preparations including oestrogens is the first-line treatment for patients with urogenital atrophy symptoms, who do not have contraindications for using oestrogen hormones. In tissues of the lower part of the urinary-genital system high proliferative effectiveness of low-dose oestrogens is observed, which results from the fact that the oestrogen receptors sensitivity is bigger than in the uterus. Usually there is not any systemic activity of this treatment, nor are there any important changes in the endometrium or a volume of the uterus. Oestrogens given to the vagina have a form of pills, pessaries, creams and vaginal rings. They may include conjugated oestrogens, oestradiol, oestriol or oestrone. The North American Menopause Society (NAMS) recommended this procedure already in 2007 (NAMS 2007). A favourable result of a local operating of oestrogens takes place at 80–90% of patients after 4–6 weeks of treatment. A good tolerance for drugs is reported, even in a long-term treatment; however, there is little data describing safety of applying this kind of therapy for a few years. Histopathological examinations of endometrium of patients treated locally with oestradiol did not show cases of hyperplasia of this tissue in the period of two years after the beginning of a therapy (Jaisamrarn *et al.* 2013; Mettler & Olsen 1991).

According to a majority of scientific societies, oestriol is the preferred oestrogen as it is the most effective in eliminating vagina symptoms. Oestriol generates in the liver as a metabolite of 17 β -oestradiol, and it is

characterized by a relatively poor systemic oestrogen activity but it has a particular cytotropic influence on urinary-genital organs emerging from the urogenital sinus in the process of organogenesis. It has not been observed that an oestriol therapy changes a concentration of oestradiol and oestrone because oestradiol is a metabolite of these hormones and it is excreted from the body with urine as an inactive substance (glucuronides or sulphates). In the recent years, preparations containing an ultra-low dose of oestrogens for vaginal use have entered the market. Particularly advantageous results of atrophic vaginitis treatment have been observed when preparations containing ultra-low-dose of oestriol and live bacteria of vagina environment of physiological conditions have been applied. This combination of oestriol and *Lactobacillus spp.* bacteria ameliorates optimization of immunological mechanisms responsible for detection and elimination of infections of the urogenital area. An increase of activity of genes for 1D and 2A secretoglobulin, the antibacterial protein secreted to the surface of mucosa, takes place. The activity of the gene for lactotransferrin, the protein playing an important role in mechanisms regulating the immunological response of the mucosa in bacterial infections, increases as well. Other advantageous mechanism of activities of locally applied oestrogens and probiotics is the activation of the gene for interleukin 1, regulating the mechanisms of the immunological response within the mucosa of the vagina (leukocyte migration, gene expression, inflammation), which hinders proliferation of bacterial pathogens. Lactobacilli introduced to the vagina resume their metabolism in the presence of oestriol, and cause a lowering of the vaginal pH within a few hours. This leads to a quick regeneration of the right vaginal biocenosis, and vanishing of the symptoms of vaginal biocenosis disorder (most frequently of bacterial vaginosis). Having applied the pills, satisfactory results are achieved at 80–90% of women, usually after three weeks of treatment, in some cases only after 4–6 weeks. Research showed that a combination of oestriol in the ultra-low-dose of 0.03 mg and of the *Lactobacillus acidophilus* bacteria applied vaginally eliminates symptoms of vagina atrophy and restores the right ecosystem in the same way like preparations containing the 0.05 mg dose of oestriol, and in the same time there are no reports that the combination evokes hyperplasia of endometrium or increases the risk of endometrium proliferation. In order to maintain the achieved result and to avoid a frequent recurrences of the complaint applying the preparation in a maintenance dose of once or twice a week is recommended usually 6 months after the treatment (Griessera *et al.* 2012; Buhling *et al.* 2012).

Recently, research concerning new methods of urogenital atrophy with the use of the ghrelin hormone or vaginal dehydroepandrosterone (DHEA) has been published. It has been stated that ghrelin is the strongest natural peptide hormone stimulating secretion of the growth hormone which, among others, prevents ageing

of the organism (Chu *et al.* 2006). It has been shown on an animal model that atrophic changes within the pelvic fundus may be completely reversed due to synergic action of ghrelin and oestrogens (Rizk & Fahim 2008). When the activity of ovaries terminates the DHEA is the main source of sexual steroids. It has been found out that a lowered concentration of the DHEA is at around 75% of women after the menopause (Labrie & Labrie 2013). Introducing a 10% cream with the DHEA to the urogenital atrophy treatment was significantly effective (Panjari & Davis 2011). During this treatment atrophic changes in the vagina faded and libido increased. It has not been noticed that the local DHEA therapy increases a concentration of oestrogens and androgens in the blood serum. This idea of treatment is called specific tissue pre-hormonal replacement therapy (Labrie *et al.* 2009). The new methods of treatment described here still require further clinical research.

SUPPORTIVE AND ALTERNATIVE METHODS

Many natural ways may help in eliminating menopausal symptoms, which is especially important when there are contraindications for a hormonal therapy. One of the natural ways are vaginal humidifiers which decrease the feeling of dryness in the vagina. They may be used before a coitus or in other situations according to a need.

The right lifestyle: healthy nourishing, avoiding stimulants, and physical activity are an important element ameliorating the comfort of a woman's life and significantly decreasing complaints due to disturbances of a hormonal balance. Physical activity influences various spheres of life and ameliorates functioning of inner systems, as well as the psychic and emotional sphere. Regular exercises decrease stress, sleeplessness, and mood swings. They are especially helpful in treating symptoms of hot flashes. Experiments done in Sweden show that at women who exercise regularly systematic hot flashes take place significantly less frequently, and if they occur their symptoms are mild. It has been shown that regular exercises of 3.5 hours weekly prevent hot flashes, and lower the risk of occurrence of osteoporosis (Ivarsson *et al.* 1998). Versatile relaxation techniques and breathing exercises reduce tension and even depression. Due to physical activity, the risk of occurrences of a cardiovascular disease or incontinence decreases. Other advantages of a regular physical activity during menopause are an improvement of oxidation and tissue nutrition, lowering of blood pressure, betterment of a physical condition, mood and self-esteem.

Sexual performance is an important element of maintaining a high quality of life after menopause. Two factors influence a level and forms of sexual activity of persons of this age: a health condition, and loneliness that affects especially women. The results of a Gallup questionnaire on menopause conducted recently

among American women in the age from 50 to 65 years old show that their sexual life has not changed (Utian & Boggs 1999). Undoubtedly, it is a huge success of the hormonal therapy. More than 30% of American women undergo the therapy. According to the Izdebski's report, 65% of Polish women say they are not sexually active at all after 50 years of age. Around 63% of Polish women knows that hormonal therapy may be helpful for a majority of complaints of the menopausal period, but only 5–7% of the concerned undergo the therapy (Izdebski 2012).

According to a Gallup questionnaire, 51% of American women in the menopausal age considers this period of life the happiest and the most satisfactory in comparison with the period between 20th and 50th year of age. Many women estimated that their life got better. They have more time for their families, spouses, hobby, career. 80% of them admits that menopause did not worsen a quality of their lives, and three quarters admit that it did not weaken their professional activity (Utian & Boggs 1999).

Individual consultancy or support groups may be helpful in coping with sadness, depression, fears or confusion, which are frequently experienced by women in the transition years. Each woman in the menopausal age must realize that being satisfied with life and belief in one's own potential is the basic factor affecting a course of menopausal changes. A woman entering this period may be happy because she has been through the most difficult phases of life and has gained experience and knowledge which she can share with others.

A gynaecologist plays an important role in maintaining the quality of life of a woman after menopause. A decent presentation of advantages and threats of HT allows the patient to take a deliberate decision about it.

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