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temat pracy: „*Występowanie zmian łagodnych w badaniach obrazowych piersi u kobiet stosujących i niestosujących hormonalną terapię zastępczą*”

### **Summary**

The most common cause of death in women in Poland are cardiovascular diseases, while cancer is on the second place. The leading cause of death among cancer types is breast cancer (23%), which is also the most common worldwide. Etiology of the majority of cases of breast cancer is not possible to determine. The importance of prolonged exposure of breasts to hormones, particularly estrogens, in women with early menarche and late menopause, nulliparous or late first pregnancy (after 30. years of age) is emphasized. Group of women under special attention should include women using hormone replacement therapy (HRT), due to the prolonged exposure to hormones. One of the most important factors in the treatment of breast cancer is early diagnosis, which is possible with numerous diagnostic tests.

The aim of the research project was to answer the following questions:

- Does the use of HRT affect the incidence of benign breast lesions and changes in breast tissue?
- Does the use of HRT affect the incidence of clinical changes and undesirable breast symptoms?
- Does the use of HRT affect more frequent screening mammography than in non-HRT group?
- Does the use of HRT increase the frequency of breast self-examination and breast examination by a physician?
- Does the age of menarche affect the use of HRT?
- Did patients with a history of cancer have regular breast examination and genetic testing performed?
- How was the level of health awareness in the study group?

The study used questionnaire data and imaging test results of 134 women who were previously screened with mammography in standard projections and BIRADS classification. The study population was divided into two groups. Group I included 71 women aged 50-69 years who never received hormone replacement therapy. Group II included 63 women aged 50-69 years who used hormone replacement therapy previously or during the study.

Breast ultrasound (US) was performed with Aloka Prosound Alfa 6 ultrasonograph. Linear transducer with a maximum frequency of 15 MHz and standard breast scanning techniques were used. For

research purpose evaluated were: - density classification according to ACR (ACR 1-4), presence of focal lesions: solid, cystic, presence of focal edema of glandular tissue, presence of dilated ducts. Results were divided into two groups – parameters dependent on HRT and independent of HRT use. Some of the questions in questionnaire concerned basic medical history: age at menarche, age at menopause, age at first birth.

The analysis demonstrated that in the study group the average age of menarche was 14 years while the average age of menopause was 50 years.

Group of women using HRT began to menstruate significantly earlier, had earlier regulation of ovulation cycles which could have caused earlier depletion of the pool of ovarian follicles, resulting in earlier occurrence of menopausal symptoms associated with hormonal deficiency which in consequence enabled women to use hormone replacement therapy.

The analysis demonstrated that in the study group only 17.16% of patients perform regular monthly breast self-examination. The use of HRT does not increase frequency of breast self-examination and frequency of breast examination by a physician such as incidence of breast cancer in relatives and symptoms and clinical changes in breasts of patients receiving HRT.

No statistically significant differences in performing previous mammography screening were found, whereas number of mammograms performed was higher in group II. In HRT group number of mammograms performed increased with education.

Authors' own studies indicate that 11.94% of patients had 1<sup>st</sup> and/or 2<sup>nd</sup> degree relative with breast cancer. However, none of the patients had information about possible gene mutation.

The analysis evaluated relationship between breast symptoms and the use of hormone replacement therapy and character of breast tissue. Overall, 37% of patients experienced breast symptoms (pain, thickening, discharge from the nipple), which were a direct reason for performing mammography. The most common complaint was breast pain. In group I and II no statistically significant differences in the incidence of the above breast symptoms were found. It demonstrates that in the study group hormone replacement therapy did not increase the incidence of undesirable breast symptoms. No significant relationship between breast symptoms and character of breast tissue was found.

In groups I and II no statistically significant differences between breast tissue character, presence of focal solid and cystic lesions, focal edema of glandular tissue and dilated ducts was demonstrated.

In the whole study group, independent of hormone replacement therapy, significant relationship between character of breast tissue and the presence of focal edema of glandular tissue was found, whereas there was no relationship between character of breast tissue and the presence of dilated ducts, which was observed with equal frequency both in glandular and glandular-fatty breasts and fatty-glandular and fatty breasts. No statistically significant relationship between character of breast tissue

and the incidence of ultrasonographically benign focal lesions was also demonstrated.

The study also evaluated correlation between character of breast tissue and the incidence of benign pathological lesions with the age of menarche, age of menopause and age of first birth.

In group I and II no statistically significant differences were found between correlation of breast density, dilation of ducts and presence of glandular tissue edema with age at menarche, age at menopause and age at first birth. Comparison of focal edema of glandular tissue and age of menarche tended to correlate in patients from group I who began to menstruate later. Also in group I patients with solid and cystic lesions gave first birth later. In group I and in study group, independent of HRT, in patients who menstruated shorter, cystic lesions were diagnosed more frequently.

The following conclusions were drawn:

- HRT was not associated with increased incidence of benign and probably benign breast lesions and no differences in the character of breast tissue were found in both study groups.
- Use of HRT was not associated with clinical changes and undesirable breast symptoms.
- Patients using HRT more frequently perform screening mammography.
- The use of HRT did not increase frequency of breast self-examination and breast examination by a physician.
- The age of menarche affect the use of HRT. Group of women who require hormone replacement therapy significantly earlier began to menstruate.
- Incidence of breast cancer in relatives and presence of breast symptoms and clinical changes in patients using HRT did not increase frequency of breast self-examination and breast examination by a physician.
- The level of health awareness in the study group was proportional to education.