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Chronic cough in postmenopausal women and its associations with climacteric symptoms

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Background: Postmenopausal women often have chronic cough, which is likely caused by hormonal changes affecting lung function and the mucous membrane of the airways, causing hypersensitivity of the cough reflex. Therefore, postmenopausal hormonal changes could play a key role in the association between increased cough and menopause. The aim of this study was to evaluate the relationship between chronic cough and postmenopausal symptoms.
Methods: We performed a questionnaire-based cohort study of generally healthy postmenopausal women (age 45–65 years). Women with cough of known origin were excluded. Comorbidities, medication, and baseline data were collected. The Menopause Rating Scale II (MRS II) was combined with the Leicester Cough Questionnaire (LCQ). Participants were divided into chronic cough versus non-coughing groups, where chronic cough was defined as symptoms lasting over 8 weeks. We performed correlation and logistic regression analyses to predict cough based on postmenopausal symptoms.
Results: Overall, 66 of 200 women (33%) reported mild-to-heavier symptoms of chronic cough over 8 weeks. No significant differences in baseline data (age, BMI, onset of menopause, years since menopause, concomitant diseases, and medication) were found between women in the coughing and non-coughing groups. The MRS II showed higher menopausal symptoms in patients with cough, with significant differences in two of the three MRS domains (urogenital, $p < 0.001$, and somato-vegetative, $p < 0.001$). Climacteric symptoms correlated strongly with parameters of cough ($p < 0.001$). Respiratory complaints could be predicted on the basis of the MRS total score ($p < 0.001$) and the somato-vegetative and urogenital domains ($p < 0,05$).
Discussion: Chronic cough was significantly associated with menopausal symptoms. Therefore, chronic cough as a possible climacteric symptom and its underlying mechanisms should be further explored.

Influence of 5a-dihydroprogesterone (5aDHP) on DCIS cells in a 3D culture model and importance for postmenopausal women

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Background: Progesterone metabolites 5a-dihydroprogesterone (5aDHP) and 3a-dihydroprogesterone (3aDHP) have pro-cancerous and anti-cancerous effects on breast cell lines, respectively, regardless of their estrogen/progesterone receptor (ER/PR) status. In breast tumor tissue, the ratio of 5aDHP and 3aDHP is reversed in favor of 5aDHP, which promotes mitogenesis and metastasis. Evidence regarding the influence of 5aDHP on ductal carcinoma in situ (DCIS) is lacking. Our aim was to provide the first data on the role of 5aDHP in DCIS and insight into possible hormone replacement therapy (HRT) for postmenopausal women after DCIS.
Methods: We used the MCF10DCIS.com cell line (ER/PR negative). Naive DCIS cells served as a control for cells treated with 100 nmol (low dose) or 10 µmol (high dose) 5aDHP. The cells were cultured in a 3D culture system in a Matrigel layer representing a reconstituted basement membrane. The desired amount of 5aDHP was added to the medium. The culture was examined under a light microscope to reveal possible morphological differences that could indicate a transition from an in situ to an invasive phenotype. The ER/PR-negative MDA-MB-231 invasive cell line was examined for comparison. DCIS cells were isolated after 5 and 12 days and PCR of proliferation markers (Ki67, STK15, MYBL2, CCNB1), invasion/metastasis (MMP11, CTSV, COL4A2, MMP9, GPR126), anti-apoptotic (EGLN1), or other (GSTM, BAG1, TGF-β, CDH1, ZEB1, ZEB2, vimentin, TWIST2, FOXC2, TWIST1, SNAIL, SNAIL2) markers selected on the basis of the literature was performed.
Results: Both naive cells and cells treated with 5aDHP (low or high dose) form spheroids, which look alike in terms of shape, size, and morphology and show no similarity to the spheroids formed by the MDA-MB-231 invasive cell line. The results of PCR of the different markers showed no statistically significant difference between naive cells and cells treated with 5aDHP (low or high dose).
Discussion: Our data suggest that 5aDHP does not facilitate tumor promotion/invasion in ER/PR-negative MCF10DCIS.com cells. As oral micronized progesterone has been proven effective for hot flushes in postmenopausal women, our data suggest that progesterone-only therapy could be considered as HRT for women after ER/PR-negative DCIS.