

Large-scale Survey of the Impact of Complementary Medicine on Side-effects of Adjuvant Hormone Therapy in Patients with Breast Cancer

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Abstract. *Background/Aim:* The present clinical investigation was performed to confirm the benefit of complementary medicine in patients with breast cancer undergoing adjuvant hormone therapy (HT). *Patients and Methods:* The patients (n=1561) were treated according to international guidelines. All patients suffered from arthralgia and mucosal dryness induced by the adjuvant HT. In order to reduce the side-effects, the patients were complementarily treated with a combination of sodium selenite, proteolytic plant enzymes (bromelaine and papain) and *Lens culinaris* lectin. On case report formulas, self assessment arthralgia and mucosal dryness were documented before and four weeks after complementary treatment. Validation was carried-out by scoring from 1 (no side-effects/optimal tolerability) to 6 (extreme side-effects/extremely poor tolerability). A total of 1,165 patients suffering from severe side-effects (symptom scores >3) were enrolled in this investigation. *Results:* Overall, 62.6% of patients (729 out of 1,165) suffering from severe arthralgia and 71.7% of patients (520 out of 725) with severe mucosal dryness significantly benefited from complementary medicine. Mean scores of symptoms declined from 4.83 before treatment to 3.23 after four weeks of treatment for arthralgia and from 4.72 before treatment to 2.99 after four weeks of treatment for mucosal dryness, the primary aims of the present investigation. The reduction of side-effects of HT was statistically significant ($p < 0.001$) after four weeks. *Conclusion:* This investigation confirms studies suggesting a benefit of complementary treatment with the combination of sodium selenite, proteolytic enzymes and *L. culinaris* lectin in patients with breast cancer.

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Breast cancer is the most common cause of cancer death in women worldwide (1). Evidence-based treatment of breast cancer follows recommendations of international expert panels (2, 3). The standard adjuvant endocrine therapy for women with hormone receptor-positive breast cancer is often restricted by severe side-effects such as mucosal dryness, arthralgia and vascular events (4, 5).

Hormone therapy (HT) for breast cancer treatment exerts anti-estrogenic effects within the breast and in the mucosal tissue. Recently a clinical investigation demonstrated an enhanced tolerability to chemotherapy, radiotherapy and HT of patients with breast cancer that were complementarily treated with a combination of sodium selenite, plant enzymes and *Lens culinaris* lectin due to side-effects such as mucosal dryness and arthralgia (6, 7). Since reduced function of mucosal linings and correlating symptoms such as arthralgia and mucosal dryness result from cytotoxic effects of chemotherapy or radiotherapy and from hormone depletion (5-8), these distinct side-effects were chosen as the primary aims of the investigation.

Patients and Methods

Patients. Women (n=1561) with histologically-verified breast cancer undergoing adjuvant HT (according to the actual recommendations) were enrolled into this investigation. A total of 1,165 patients suffering from severe side-effects of their HT (arthralgia and mucosal dryness) were validated and documented.

Complementary treatment. The patients were complementarily treated with an oral medication (Equizym MCA; Kyberg Pharma GmbH, Oberhaching, Germany) containing sodium selenite (300 µg/day), proteolytic enzymes (bromelaine 400 mg/day and papain 400 mg/day) and *L. culinaris* lectin (20 mg/day). Complementary treatment was continued for four weeks. Safety and efficacy of sodium selenite and proteolytic enzymes were extensively investigated in randomized controlled trials (9, 10). No other complementary remedies, in particular antioxidant vitamins, trace elements and immunostimulants, were taken by the patients throughout this investigation.

Side-effects of HT. Case report formulas were used to document self-assessed safety and efficacy of the complementary treatment. Patients were assessed routinely before onset and four weeks after terminating the complementary therapy. The efficacy of the complementary treatment was verified by questioning the severity of the side-effects mucosal dryness and arthralgia (as primary aims of this investigation). Severity of symptoms was quantified by scoring from 1 (no side-effects) to 6 (extreme side-effects). An average score was calculated for symptoms of the adjuvant therapy to investigate the value of this complementary treatment.

Statistics. Student's paired *t*-test was performed to calculate statistical significance between mean values of scores for side-effects of HT after four weeks of complementary treatment.

Results

A total of 1,561 evaluable patients with breast cancer were enrolled into this clinical investigation. Patients investigated (n=1165; mean age 58 years) suffered from severe mucosal dryness and arthralgia induced by HT.

Tolerability to adjuvant HT along with complementary administration of sodium selenite, proteolytic enzymes and *L. culinaris* lectin was investigated by self-assessment. Overall, 62.6% of patients (729 out of 1165) suffering from arthralgia and 71.7% of patients (520 out of 725) with mucosal dryness significantly benefited from complementary medicine. Furthermore, the severity of both side-effects were significantly reduced (Figure 1; $p < 0.001$) after four weeks of complementary treatment. These results demonstrate that an efficient management of adverse reactions to adjuvant HT in patients with breast cancer is possible by well-defined complementary medicine.

No severe adverse reactions (*e.g.* nausea, or bloating) to the complementary medication (sodium selenite, proteolytic enzymes and *L. culinaris* lectin) were documented. These findings confirm recent trials on the safety of this complementary therapy (11, 12).

Discussion

This clinical investigation was performed to further evaluate and confirm the safety and efficacy of a complementary medication composed of sodium selenite, proteolytic enzymes and *L. culinaris* lectin. Sodium selenite and proteolytic enzymes have proven clinical safety and efficacy in controlled trials (9, 10); *L. culinaris* lectin was added to the medication because of its stabilizing effects on mucosal surfaces (11, 12, 13). The scientific rationale for this complementary treatment is enhancement of the tolerability to HT by reduction of defined adverse reactions to optimize this guideline-based therapy. This investigation shows that complementarily administered sodium selenite, proteolytic enzymes and *L. culinaris* lectin significantly reduced defined side-effects (*e.g.* arthralgia, mucosal dryness) of adjuvant HT in patients with breast cancer.

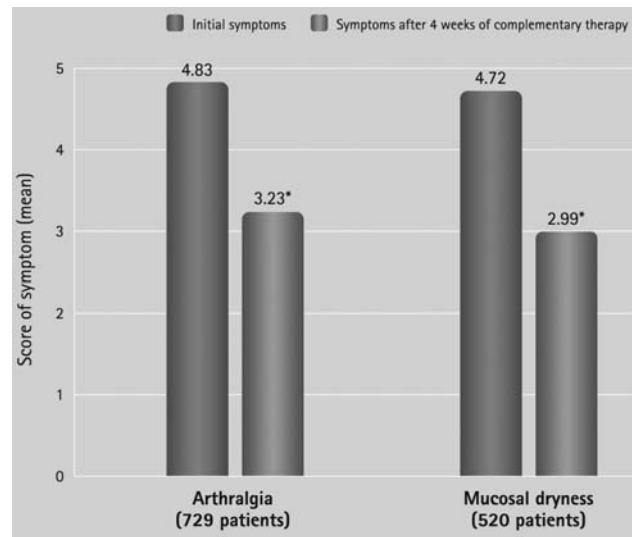


Figure 1. Intensity of side-effects of hormone therapy in patients with breast cancer after 4 weeks of complementary treatment with sodium selenite, proteolytic enzymes and *Lens culinaris* lectin. The severity of symptoms was quantified by scoring from 1 (no side-effects) to 6 (extreme side-effects). Patients with severe side-effects (score >3) were investigated. An average score was calculated for symptoms of the adjuvant therapy to investigate the value of this complementary treatment. The Student's *t*-test was performed to calculate statistical significance of differences in scores between time points. * $p < 0.001$.

Since the tolerability to adjuvant HT determines its optimal administration, complementary treatment with sodium selenite, proteolytic enzymes and *L. culinaris* lectin may enhance the chance of curing this disease.

References

- 1 Kreienberg R, Jonat W, Volm T, Moebus V and Alt D: Management des Mammakarzinoms. Springer Verlag, Hamburg, 2006.
- 2 German Cancer Society: Interdisziplinäre Leitlinie für die Diagnostik, Therapie und Nachsorge des Mammakarzinoms, Zuckschwerdt Verlag, München, 2012.
- 3 de Vita VT, Hellman S and Rosenberg SA: Cancer. Principles and Practices of Oncology. Lippincott Williams and Wilkins, Philadelphia, Ninth edition, 2011.
- 4 Howell A, Cuzick J, Baum M, Buzdor A, Dowsett M, Forbes JF, Hocht-Boes G, Houghton J, Locker GY, Tobias JS and the ATAC Trialists' Group: Results of the ATAC (arimidex, tamoxifen, alone or in combination) trial after completion of 5-years' adjuvant treatment for breast cancer. *Lancet* 365: 60-62, 2005.
- 5 Coombes RC, Hall E, Lorna J, Gibson M Paridaeus R, Jassem J, Delozier T, Jones SE, Alvarez I, Bertelli G, Ortmann O, Coates AS, Bajetta E, Dodwell D, Coleman RE, Fallowfield LJ, Mickiewicz E, Andersen J, Lonning PE, Cocconi G, Stewart A, Stuart N, Snowdon CF, Carpentieri M, Massimini G, Bliss JM,

- van de Velde C and the Intergroup Exemestane Study: A randomized trial of Exemestane after two to three years of Tamoxifen therapy in postmenopausal women with primary breast cancer. *N Engl J Med* 350: 1081-1092, 2004.
- 6 Uhlenbruck G, van Leendert R, Schneider B and Beuth J: Reduced side-effects of adjuvant hormone therapy in breast cancer patients by complementary medicine. *In Vivo* 24: 799-802, 2010.
- 7 Beuth J: Evidence-based complementary oncology. Innovative strategies to optimise standard therapy strategies. *Anticancer Res* 5: 1667-1671, 2010.
- 8 Wiggins DL and Dizon DS: Dyspareunia and vaginal dryness after breast cancer treatment. *Breast Cancer* 6: 18-22, 2008.
- 9 Beuth J: Proteolytic enzyme therapy in evidence-based oncology: Fact or fiction? *Int Cancer Ther* 4: 311-316, 2008.
- 10 Gröber U, Mücke R, Adamietz IA, Holzhauer P, Kisters K, Büntzel J and Micke O: Komplementärer Einsatz von Antioxidanzien und Mikronährstoffen in der Onkologie. *Der Onkologe* 19: 136-143, 2013.
- 11 Beuth J, van Leendert R, Schneider B and Uhlenbruck G: Complementary medicine on side-effects of hormone therapy in patients with breast cancer. *In Vivo* 27: 869-671, 2013.
- 12 Beuth J, van Leendert R, Pempelfort K, Schneider B, Grund C and Engelmann U: Complementary medicine down-regulates side-effects of hormone therapy in prostate cancer patients. *In Vivo* 28: 979-982, 2014.
- 13 Vecchi M, Torgano G and de Franchis S: Evinced of altered structural and secretory glycoconjugates in the jejunal mucosa of patients with gluten-sensitive enteropathy and subtotal villus atrophy. *Gut* 30: 804-810, 1989.

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