Complementary Medicine on Side-effects of Adjuvant Hormone Therapy in Patients with Breast Cancer

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Abstract. Background: This clinical investigation was performed in order to evaluate the benefit of complementary medicine in patients with breast cancer undergoing adjuvant hormone therapy (HT). Patients and Methods: The patients (n=680) were treated according to international guidelines. All patients suffered from arthralgia and mucosal dryness induced by the adjuvant HT. In order to reduce 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 of defined side-effects of HT (namely 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), however, only patients suffering from severe side-effects (symptom scores >3) were enrolled in this investigation. Results: A total of 64% (316 out of 494) of patients suffering from severe arthralgia and 62% of patients (194 out of 310) with severe mucosal dryness significantly benefited from complementary medicine. The severity of side-effects of HT was reduced by complementary treatment. Mean scores of symptoms declined from 4.92 before treatment to 3.16 after four weeks of treatment for arthralgia and from 4.83 before treatment to 3.21 after four weeks of treatment for mucosal dryness, and these were the primary aims of this investigation. The reduction of side-effects of HT was statistically significant (p<0.001) after four weeks. Conclusion: This investigation further demonstrates benefits of indication-based complementary treatment with the combination of sodium selenite, proteolytic enzymes and L. culinaris lectin in patients with breast cancer.

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). They are regularly updated during conferences and comprise of indication-based surgery, chemotherapy (CT), radiotherapy (RT), and hormone therapy (HT) (4, 5). CT and RT are known to induce a broad range of side-effects, e.g. arthralgia and mucosal dryness (6, 7). The standard adjuvant endocrine therapy for women with hormone receptor-positive breast cancer, as well, is often restricted by severe side-effects such as mucosal dryness, arthralgia and vascular events (8, 9). HT for breast cancer treatment exerts anti-estrogenic properties within the breast and in mucosal tissue. Lack of estrogen causes thinning of mucosal linings, mucosal dryness and inflammation (10). Recently a clinical investigation demonstrated an enhanced tolerability to CT, RT and HT of patients with breast cancer that were complimentarily-treated with a combination of sodium selenite, plant enzymes and L. 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 CT or RT and from hormone depletion (6, 7, 9, 10) these distinct side-effects were chosen as the primary aims of the present investigation. Complementary medicine is popular all over the world. If these treatments are carefully chosen and managed, they may enhance comfort and well-being (6, 7, 11). Some complementary treatments have been tested, namely nutrition, sports and psychooncology (6, 7). Certain complementary medications, such as sodium selenite and proteolytic enzymes, have shown clinical benefits in randomized controlled trials since they reduced side-effects of CT and RT and enhanced the quality of life (12-14), while L. culinaris lectins are traditional naturopathic remedies used to stabilize mucosal surfaces (15). This clinical investigation was performed to evaluate the safety and efficacy of complementary sodium selenite, proteolytic enzymes and L. culinaris lectin treatment to reduce defined side-effects, namely mucosal dryness and arthralgia of guideline-based HT in patients with breast cancer.

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Key Words: Breast cancer, adjuvant hormone therapy, side-effects, complementary medicine, tolerability, L. culinaris lectin.
Patients and Methods

**Patients.** Women (n=680) with histologically-verified breast cancer undergoing adjuvant HT (according to the actual St. Gallen recommendations) were enrolled into this investigation. Patients suffering from severe side-effects of the HT (symptom score >3; arthralgia n=494, mucosal dryness n=310) were initially 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 to HT was continued for four weeks. Safety and efficacy of sodium selenite and proteolytic enzymes were extensively investigated in randomized controlled trials (12, 13). Their combination with *L. culinaris* lectin (15) was found to be an innovative and beneficial complementary approach to stabilize mucosal linings (6, 7). No other complementary remedies, in particular antioxidative vitamins, trace elements and immunoactivation, were followed 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 *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 680 evaluable patients with breast cancer were enrolled into this clinical investigation. Patients investigated (mean age 58.3 years) suffered from mucosal dryness and arthralgia induced by HT. Patients suffering from severe side-effects (symptom scores >3) were enrolled into this investigation.

Tolerability to adjuvant HT along with complementary administration of sodium selenite, proteolytic enzymes and *L. culinaris* lectin was investigated by self-assessment. Overall, 64% of patients (316 out of 494) suffering from arthralgia and 62% of patients (194 out of 310) 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.

Adverse reactions (e.g. nausea, bloating 12% of patients; 3% stopped the medication) to the complementary medication (sodium selenite, proteolytic enzymes and *L. culinaris* lectin) were documented. These findings confirm randomized controlled trials on the safety of sodium selenite and proteolytic enzymes (12).

**Discussion**

By definition, complementary medicine cannot replace the well-studied conventional cancer therapies such as surgery, CT, RT and HT. Complementary approaches in oncology that are recommended as an addition to standard treatment claim to optimize these therapies. Data emerging from recent clinical trials show that defined complementary procedures may be beneficial for patients (6, 7, 13, 17). Complementary medicine should primarily be regarded as an optimization of current standard treatment options in oncology. It is to be differentiated from alternative medicine, which postulates to provide replacements for conventional toxic approaches. Although complementary and alternative medicines are grouped together in the popular acronym CAM, they are in fact quite different in their aims. Since many alternative treatments are still poorly-documented (16), equating the two could lead to a misguided and undeserved rejection of all complementary medicine. The fact that complementary...
recommendations concerning balanced nutrition, physical activity, psychooncologic support, as well as defined medications, proteolytic enzymes or defined trace elements and vitamins, can optimize standard treatment has been shown in clinical studies that produced results of improvement in quality of life (12, 13).

This clinical investigation was performed to evaluate the safety and efficacy of an innovative complementary medication composed of sodium selenite, proteolytic enzymes and *L. culinaris* lectin. Sodium selenite and proteolytic enzymes have proven their clinical safety and efficacy in controlled trials (12, 13); *L. culinaris* lectin was added to the medication because of its stabilizing effects on mucosal surfaces (15). 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 of adjuvant HT in patients with breast cancer.

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