

The Use of Traditional Chinese Medicine Among Breast Cancer Patients: Implications for The Clinician

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Abstract

Introduction: Traditional Chinese Medicine or Traditional Complementary Medicine (TCM) is commonly used in our culture. There are several concerns regarding its use in patients undergoing conventional treatments for breast cancer. In this study, we aimed to evaluate the prevalence and pattern of TCM use among our breast cancer patients, and to identify patients who were most likely to choose TCM. **Materials and Methods:** A total of 300 patients on active follow-up with Breast Service at Tan Tock Seng Hospital were interviewed using a structured questionnaire. **Results:** A total of 35% (104 of 296) of patients reported using TCM. The majority of the patients were introduced to TCM by family and friends following the diagnosis of breast cancer. All except 3 patients continued with recommended conventional therapy although most did not inform their clinicians of TCM use. None of the patients reported any serious adverse events and 75% of them perceived a benefit from TCM use. Younger patients and those of Chinese ethnicity were more likely to use TCM ($P < 0.01$ and $P = 0.03$ respectively). There was no significant difference in the dialect group, religious beliefs and educational level between the 2 groups ($P > 0.05$). **Conclusion:** TCM use is common among our breast cancer patients, particularly the younger women. However, most patients do not inform their clinicians of TCM use while on recommended conventional therapies. It is therefore important for clinicians to initiate discussions regarding TCM use in order to be aware of potential unwanted drug interactions.

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Introduction

Complementary and alternative medicine practices and products are often believed to be holistic and natural cures for many ailments. Traditional Chinese medicine (TCM) is one of the most commonly used forms of complementary medicine in our culture. Rather than treating just the disease condition alone, TCM philosophy strives to restore the balance between the yin and yang elements in the body in order to promote general well being. TCM is commonly used by those afflicted by cancer.¹⁻⁴ It is believed to boost the immune system and relieve cancer-related symptoms as well as the adverse effects associated with conventional cancer treatments.^{5,6} Some also believe TCM to be effective in preventing disease recurrence.

While TCM continues to be widely used in countries like China and Taiwan, it is thought to have become less popular locally. Over the years, Singaporeans have adopted

an increasingly westernised lifestyle. Likewise, the local healthcare system is heavily influenced by Western practices and places great emphasis on treatments that have proven scientific benefits. TCM has not been subjected to rigorous evaluation, and its benefits are suggested from small studies, which often have inadequate methodologies. Those better educated are thought more likely to opt for treatments that have been scientifically proven. It was therefore assumed that TCM use remains common only among the older and less educated, with most of the younger generation considering it akin to folk remedies. However, recent studies in Singapore found that TCM use is common among adult cancer patients.¹⁻³ In fact, studies have consistently found that those who use complementary treatments, including TCM, are more likely to be younger, better educated and of higher socioeconomic status.⁷

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Complementary and alternative medicine use is reportedly most common among women with breast cancer.^{8,9} Locally, discussions about management often involve only conventional treatments and TCM use is seldom mentioned. Many patients do not volunteer their use of TCM either because they feel that it is irrelevant, or because they believe their clinicians will disapprove. On the other hand, many clinicians are hesitant to endorse TCM use because they are unfamiliar with TCM, and certain herbs are known to interfere with conventional agents.^{10,11} Furthermore, TCM products are not regulated by the same standards applied to conventional Western medicines and instances of serious toxicities arising from contamination with undeclared pharmaceutical agents are not uncommon.^{12,13} In this study, we aim to determine how common TCM use is among our local breast cancer patients, and to identify those who are most likely to use TCM. This will allow us to better counsel and advise patients regarding concurrent TCM use while undergoing conventional therapy.

Materials and Methods

A total of 300 consecutive patients on follow-up with the Breast Service were recruited. All patients had been previously diagnosed with breast cancer and were on active follow-up. Two patients were excluded after they declined to participate in the study. The remaining 298 patients who consented to participate in this study were individually interviewed in-person by a trained interviewer using a structured questionnaire. This study had institutional ethics approval (DSRB B/08/072).

The questionnaire survey collected information pertaining to: (i) patients' biodata, including their age, ethnicity, dialect group, religion and highest education level, (ii) disease characteristics, including the mode of presentation, whether the lump was self-detected or an incidental finding and the tumour stage, and (iii) TCM use, including how they were introduced to TCM, whether TCM use was discussed with their doctor, whether TCM was used together with or instead of recommended conventional therapies, the perceived benefit from TCM use and the duration of use. In this study, TCM included medicinal herbs purchased over the counter from Chinese medicinal halls or prescribed by TCM practitioners, as well as formulations and decoctions with Chinese herbs as the main ingredients, including Chinese patent medicines (standardised herbal formulas) and Chinese herbal extracts.

In total, 296 patients were included in the final analysis. Two patients were excluded because the questionnaire survey was incomplete. Statistical analysis was performed using GraphPadPrism version 4 (GraphPad software Inc., San Diego CA). Correlation analyses were performed using the chi-square test. Comparisons of patient age and tumour

size between TCM users and non-users were performed using the Mann-Whitney U test. A 2-tailed *P* value test was used in all analyses and a *P* value of less than 0.05 was considered statistically significant.

Results

Patient and Tumour Characteristics

Characteristics of the 296 patients included in the study are detailed in Tables 1 and 2. Fifty-five of 296 patients (18.5%) were diagnosed with DCIS, 34.8% (103 of 296) with Stage I breast cancer, 30.7% (91 of 296) with Stage II disease, 9.5% (28 of 296) with Stage III disease and 2.0% (6 of 296) with Stage IV disease. Median patient age was 56 years (range, 33 to 87 years). Fifty-three percent of patients

Table 1. Patient Demographics

	Patients who took TCM (n = 104)	Patients who did not take TCM (n = 192)	<i>P</i> value
Median age (years)	53.0 (33.0 to 80.0)	57.0 (33.0 to 88.0)	0.0002
Ethnicity			0.17
Chinese	98	167	
Malay	5	18	
Indian	1	8	
Others	0	1	
Dialect group			0.13
Hokkien	40	52	
Cantonese	23	30	
Teochew	24	52	
Others	12	32	
Religion			0.05
Christian/Catholic	19	53	
Buddhist	62	95	
Muslim	6	18	
Hindu	0	6	
Others	17	21	
Education level			0.10
None	9	33	
Primary	29	60	
Secondary	47	66	
Higher	18	28	
Presentation			0.39
Self detected lump	63	125	
Incidental	41	67	

were Buddhists, reflecting the large Chinese majority (90%) within the study population. Christians and Catholics accounted for 24.3% (72 of 296) of the study population, and Muslims another 8.1% (24 of 296). The majority of patients had at least completed primary school education; only 14.2% of them (42 of 296) had not received any formal education. Most patients (188 of 296, 64%) had detected a breast lump themselves; others were incidentally noted to have a breast lump by a clinician. Median tumours size was 25 mm (5 to 100 mm); 8 patients had presented with T3 tumours and 12 presented with T4 tumours.

Table 2. Characteristics of Breast Tumours and TCM Usage

	Patients who took TCM	Patients who did not take TCM	P value
Median tumour size (mm)	30.0 (10.0 to 100.0)	25.0 (5.0 to 100.0)	0.17
T status			0.96
Tis	20	35	
T1	45	87	
T2	29	56	
T3	4	4	
T4	4	8	
Stage of disease			0.46
0	20	35	
I	31	72	
II	27	64	
III	14	14	
IV	1	5	
Introduced by:			
Friends and relatives	77		
TCM practitioner	18		
Media	4		
Self search	5		
Discussed with doctor			
Yes	29		
No	75		
Concurrent conventional medication			0.10
Yes	57	82	
No	46 (3 had refused hormonal treatment and taken TCM instead)	42	
Median duration of TCM use (month)	6 (0.5 to 156)		
Benefits from TCM			
Yes	77		
No	27		
Started before surgery	26		

Characteristics of TCM Users

One hundred and four patients (35.1%) reported using TCM. Median age of TCM users was 53 years (range, 33 to 80 years). All except 6 (94.2%) were Chinese, and most (59.6%) were Buddhists. Only 9 patients in this group had no formal education. More than half the patients had detected a breast lump themselves and had presented with early breast cancer. In total, 75% of patients (78 of 104) started on TCM only after being diagnosed with breast cancer, and had been introduced to it by family and friends. Eighteen patients had sought advice from TCM practitioners. It was observed that only 27.8% (29 of 104) of patients had informed their doctors of their use of TCM. Most (70.7%) had not volunteered the information as they had not been asked specifically about it; 11 patients were afraid of being reprimanded by their clinicians, and 2 patients felt that their clinicians had no understanding of TCM. Three patients chose to use TCM instead of prescribed hormonal therapy. Median duration of TCM use was 6 months (range, 0.5 to 156 months). Of note was that 75% of the patients (77 of 104) perceived a benefit from TCM and none of the 104 patients reported any significant adverse effects.

Comparison with Non-TCM Users

Patients who chose TCM were significantly younger than those who did not (53.0 years and 57.0 years respectively; $P < 0.01$). Chinese patients were 3 times more likely to use TCM than non-Chinese patients ($P = 0.03$, OR 2.64, 95% CI, 1.05 to 6.62). There was no significant difference in the dialect group, religious beliefs and education level between the 2 groups ($P > 0.05$). In addition, there was also no statistical difference in the mode of detection (whether self-detected or clinician-detected), tumour size or disease ($P > 0.05$).

Discussion

Complementary alternative medicine comprises a diverse group of therapies, including herbs and supplements, massage therapy, acupuncture and psychological therapies. We have chosen to focus on TCM in this study since it is the most commonly used form of complementary medicine in our local population.¹⁻³ Although largely unsubstantiated, there are reports to suggest that TCM inhibits cellular proliferation and modulates apoptotic responses in breast cancer cells in vitro.^{14,15} Beta-glucans, present in Shiitake mushrooms, were found to promote innate anti-tumour immunity in combination with targeted therapies such as trastuzumab and rituximab.^{16,17} Another study reported that polysaccharide krestin (PSK), an extract from the fungus *Coriolus versicolor*, conferred a survival advantage in colorectal cancer when used together with conventional chemotherapy.¹⁸

The patients' demographics and tumour characteristics in our study are comparable to the figures published in 'Trends of Female Breast Cancer in Singapore 2006 to 2010' by National Registry of Diseases Office, Singapore in July 2012.¹⁹ Distribution of ethnicity, age specific incidence rate and stage of disease at the point of diagnosis closely reflect the data published by the national registry. Majority of our patients are of Chinese ethnicity and most breast cancers were diagnosed at early stages of I and II as opposed to advanced stages.

In our study, 35% of our breast cancer patients reported using TCM. Younger women were more likely to use TCM and only 9% of TCM users had no formal education, compared to 17% of non-TCM users. Religious beliefs did not influence the decision to use TCM. This is in keeping with other studies which have found TCM use more common among the better educated and younger age group, and is in contrast to the common belief that it is the older and less educated who are less familiar and comfortable with conventional Western medicine who are more likely to use TCM.^{4,7} Younger women may view TCM as a form of natural remedy that provides a more holistic cure without the potential adverse effects commonly associated with many conventional treatments. Our study observed that the majority of patients had started using TCM after being diagnosed with breast cancer. Notably, most patients continued to receive recommended conventional treatments and did not use TCM as an alternative. It is likely that many women do not consider TCM as having similar treatment efficacy as conventional treatments, but rather use TCM to boost their immunity so as to better tolerate surgery and subsequent adjuvant treatments. While this is reassuring, the concurrent use of TCM can potentially complicate conventional treatments, especially since clinicians are generally unaware of its use. Certain medicinal herbs have anti-coagulant properties and can increase the risk of excessive oozing and haematoma formation following surgery; unexpected drug interactions can also result in reduced efficacy or increased toxicity of chemotherapeutic agents.^{10,11,20}

Our study highlighted that most women used TCM despite a paucity of strong scientific evidence supporting its benefits. Most of the women in our study were introduced to TCM by their family and friends. But in spite of inconclusive data regarding the anti-tumour properties of TCM, the majority perceived a beneficial effect from TCM use. Even if this is purely psychological, it should not be disregarded, as there are suggestions that a positive psychology can improve

survival.^{21,22} Psychological interventions introduced following the diagnosis of breast cancer to encourage a positive psychology appeared to reduce the risk of disease recurrence.²³ A positive psychology may exert a direct effect on tumour cell biology by modulating cortisol levels, although the exact mechanisms remain unclear.²⁴ Perhaps more important is the observation that none of the patients reported any significant adverse effects from the use of TCM, further strengthening the widely held belief that TCM is safe. This perceived lack of toxicity possibly contributes to the willingness to use TCM despite a lack of proven benefit. Most feel that even if TCM provides no benefit, it will not cause any harm. This may not be entirely untrue and it will be unwise to go to the extreme of disapproving of all TCM use during the course of conventional cancer treatment. Such a stance is unlikely to change existing attitudes towards TCM and may in fact strengthen commonly held perceptions that Western medicine and TCM are mutually exclusive and cause more patients to withhold information regarding concurrent TCM. A moderated approach is probably more appropriate, where TCM use is acceptable so long as it does not interfere with conventional therapies. Rather than ignoring TCM use, clinicians should perhaps not shy away from asking their patients directly about concomitant or intended TCM use. Although most clinicians will not be able to engage in an in-depth discussion about the benefits of TCM use or advice about potential undesirable interactions with concurrent treatments, such an approach allows the clinician to direct these women to established TCM practitioners who can offer reliable and appropriate advice. This will help guide those keen on TCM in making well-informed decisions.

Conclusion

Our study has shown that TCM use is relatively common among local breast cancer patients, particularly the younger women. Most patients perceive it to be beneficial and with little serious adverse effect despite no convincing evidence of its anti-tumour or immune-boosting effects. It is likely that many will continue to use TCM while undergoing conventional cancer treatments. A more open approach towards the use of TCM will serve not only to alert clinicians to potentially important drug interactions, but will also ensure that its benefits, even if only psychological, are not overlooked.

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