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Jamu as Alternative Therapy to Improve Quality of Life (QoL) of Benign Breast Tumor Patients at Rumah Riset Jamu "Hortus Medicus"

Zuraida Zulkarnain*, Agus Triyono

Medicinal Plant and Traditional Medicine Research and Development Centre,
Ministry of Health, Indonesia

Abstract

Women with benign breast tumors could experience decreased in quality of life (QoL) due to pain and fear over the disease. This study aimed to investigate the QoL outcome in benign breast tumor patients who receive alternative treatment with jamu. A total of 26 female patients who came to Rumah Riset Jamu (RRJ) "Hortus Medicus" Tawangmangu in the period of September-December 2013 with complaints of breast tumor and met the inclusion criteria were included in this study. They were given Jamu formula for breast tumor and drank its water infusion twice daily for 16 weeks. Short Form-36 (SF-36) scores was measure at baseline, middle and the end of study. SF-36 is a tool to assess the QoL that has been widely used in health research. The mean scores of SF-36 is elevated in middle and the end of study compare to baseline. There were significant differences between the mean scores before and after treatment (paired t test, $p<0,05$). The results showed that Jamu had the potential to improve quality of life in patients with benign breast tumor.

Keywords : benign breast tumor, Jamu, QoL, SF-36

INTRODUCTION

Benign breast tumors occupy the highest prevalence compared with other types of tumors in women (Guray and Sahin, 2016). Although has the lower mortality compared to breast cancer, attention regarding management of this tumor is needed because it can affect the quality of life (QoL) and productivity of the sufferers (Goehring and Morabia, 1997). Pain in the region of the tumor, depressed and anxious feeling about the disease are the factors causing a decrease in the QoL in patients with benign breast tumors (Deane and Degner, 1998). Andrykowski, *et al*. study (1996) showed that patients with breast cancer and benign breast had no different level of psychological stress.

Rumah Riset Jamu (RRJ) "Hortus Medicus" is a type A Jamu Clinic, under the responsibility of Medicinal Plant and Traditional Medicine Research and Development Centre, Ministry of Health. As part of Indonesian Government "Jamu Saintification" program implementation, RRJ becomes a place for clinical trials of Jamu. RRJ has dual function, research and services. Jamu clinical trials conducted in order to find evidence base regarding efficacy and safety of native Indonesia herbal medicines (Kemenkes RI, 2010).

In the year of 2013 RRJ performed clinical trials related to Jamu as an alternative therapy to the benign breast tumors. This study measured QoL as one of outcome parameters Assessment of QoL using the form -36 short which is already widely used in health research in the world and proved its validity (Ware and Sherboune, 1992; Lindley, *et al*., 1998). This study aimed to investigate the QoL outcome in benign breast tumor patients who receive alternative treatment with jamu.

*Corresponding author e-mail: zuraida.zu@gmail.com

METHODS

A total of 26 female patients who came to Rumah Riset Jamu (RRJ) "Hortus Medicus" Tawangmangu in the period of September-December 2013 with complaints of breast tumor and met the inclusion criteria were included in this study. Inclusion criteria: women who suffer from fibroadeno mammae (FAM) type of benign breast tumor (diagnose confirmed with history, physical examination, breast ultrasound, and anatomic pathology examination of fine needle aspiration biopsy (FNAB), the patient's age between 17-50 years, the patient was willing to follow the schedule of follow-up study and willing to signed informed consent. Exclusion criteria: patients who are hypersensitive to any of the components of the Jamu Formula, patients taking drugs or other herbs that has the same function, pregnant and lactation women (based on recognition), patients with complications of severe disease, such as heart failure NYHA III and IV, severe gastritis, acute myocardial infarction.

The subjects of this study consumed Jamu Formula as an alternative therapy for them that consist of temu mangga rhizomes (*Curcuma manga*), white turmeric rhizome (*Kaemferia rotunda*), green tea leaves (*Camellia sinensis*), mistletoe (*Scurulla sp*) and bidara upas rhizomes (*Merremia mamosa*) with certain dose. Jamu Formula boiled in 4 cups of water in the morning for about 15 minutes until the water remaining 2 cups to drink one glass in the morning and one glass in the evening. Jamu was taken daily for 16 weeks. Assessment of QoL using a *Short From* 36 (SF-36) performed at baseline, middle and the end of study.

SF-36 containing 36 grains of questions. Answer choices ranged from 2 to 6 possibility. Value ranges from 0 to 100. The value of 100 is the best QoL and the value 0 as the worst. SF-36 contain 8 dimensional measurement, physical function (PF), role limitation due to physical health (RLPH), role limitations due to emotional problems (RLEP), energy/fatigue (E), emotional well being (EWB), social function (SF), pain (P) and general health (GH). There are two steps in scoring SF-36 (RAND, 2016).

This study has received ethical approval from the Ethics Committee of Health Research, Ministry of Health with number LB. 02.01/5.2/KE/456/2013.

Table I. Step 1: Recoding Items

Item numbers	Change original response category *	To recoded value of:
1, 2, 20, 22, 34, 36	1 →	100
	2 →	75
	3 →	50
	4 →	25
	5 →	0
3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1 →	0
	2 →	50
	3 →	100
13, 14, 15, 16, 17, 18, 19	1 →	0
	2 →	100
21, 23, 26, 27, 30	1 →	100
	2 →	80
	3 →	60
	4 →	40
	5 →	20
	6 →	0
24, 25, 28, 29, 31	1 →	0
	2 →	20
	3 →	40
	4 →	60
	5 →	80
	6 →	100
32,33,35	1 →	0
	2 →	25
	3 →	50
	4 →	75
	5 →	100

*Precoded response choices as printed in the questionnaire.

Table 2. Step 2: Averaging Items to Form Scales

Scale	Number of items	After recoding per Table 1, average the following items
Physical function (PF)	10	3 4 5 6 7 8 9 10 11 12
Role limitations due to physical health (RLPH)	4	13 14 15 16
Role limitations due to emotional problems(RLEP)	3	17 18 19
Energy/fatigue(E)	4	23 27 29 31
Emotional well-being(EWB)	5	24 25 26 28 30
Social functioning(SF)	2	20 32
Pain (P)	2	21 22
General health(GH)	5	1 33 34 35 36

RESULT AND DISCUSSION

In this study, total score and scores for each dimension of the SF-36 was measured.

Mean scores of QoL experienced an increase at the end of the study, from 64.05 becoming 79.34. Analysis using Paired t test obtained p=0.000 (p<0.05), which means that there are significant differences in QoL scores before and after intervention with jamu (Table 3).

These eight SF-36 dimensions mean score increased after the intervention for 56 days and is increasing at the end of the intervention (day 112) except the dimension of energy decreased slightly on day 112 compared to day 56 (Fig. 1). Factors beyond the disease could be the cause of the decline, such as: the activity in which many SF-36 when charging is done.

The statistical test showed significantly different mean scores for each dimension of the SF-36 in D-56 and D-112 in comparison with the D-0 (Table IV). SF-36 is a QoL assessment tool that is widely used in research related to tumors and breast cancer. These eight SF-36 dimensions represent two aspects: the physical and mental aspects.

FAM is a type of benign breast tumor most often found. It is usually a disease of early reproductive life; the peak incidence is between the ages of 15 and 35 years (Guray and Sahin, 2016). The current management of patients with clinically or radiologically suspected fibroadenoma varies. Some physicians prefer excision for tissue diagnosis, but conservative management will likely replace surgical treatment in the near future (Guray and Sahin, 2016). One of alternative management in patient with FAM is by drinking herbal remedy like Jamu.

Table 3. The Average of SF-36 Scores

	N	Mean	P
SF-36 (D-0)	26	64.05	
SF-36 (D-56)	26	75.88	0.000*
SF-36 (D-112)	26	79.34	0.000*

*paired t test with p = 0.000 (< 0.05)

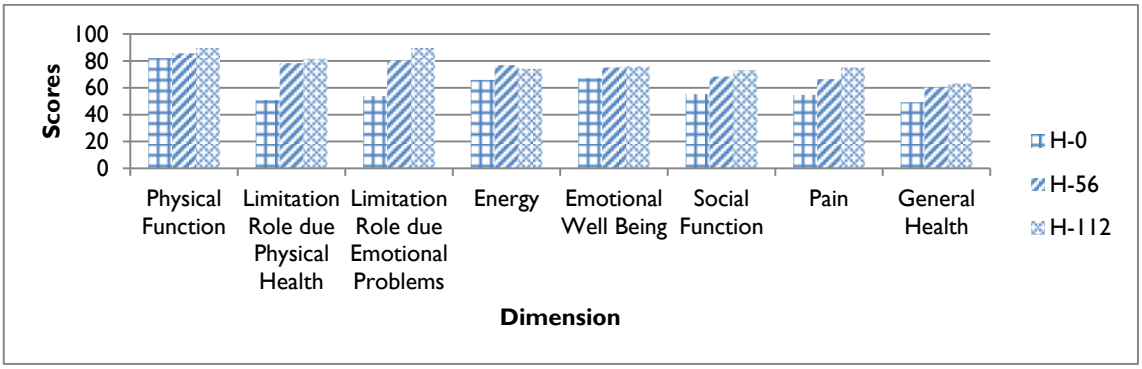

Figure 1. Increasing of SF 36 Mean. A total of 26 female patients in Rumah Riset Jamu (RRJ) "Hortus Medicus" Tawangmangu in the period of September-December 2013 who diagnosed.

Table IV. mean of SF-36 Dimension

Dimension	Mean	*P*
PF D-0	82.11 ± 15.24	
PF D-56	85.77 ± 12.12	0.039*
PF D-112	89.61 ± 10.67	0.001*
RLPH D-0	50.96± 42.71	
RLPH D-56	78.35 ± 33.48	0.001**
RLPH D-112	81.73 ± 28.77	0.001**
RLEP D-0	53.85 ± 47.21	
RLEP D-56	80.45 ± 35.35	0.009**
RLEP D-112	89.745 ± 24.53	0.007**
E D-0	65.96 ± 18.22	
E D-56	76.92 ± 11.32	0.02*
E D-112	74.12 ± 19.10	0.016*
EWB D-0	67.31 ± 18.29	
EWB D-56	75.23 ± 14.36	0.014*
EWB D-112	76 ±14.4	0.001*
SF D-0	55.29 ± 24.59	
SF D-56	68.46 ±18.82	0.001*
SF D-112	73.27 ± 16.74	0.000*
P D-0	54.81 ± 22.49	
P D-56	66.54± 18.71	0.001*
P D-112	75.29± 16.74	0.000*
GH D-0	49.42 ± 16.3	
GH D-56	60.38 ± 16.30	0.000*
GH D-112	63.27 ± 17.60	0.000*

* paired t test comparing each measurement with H-0
** Wilcoxon test comparing each measurement with H-0

Jamu formula for tumor consist of herbs that has been used by Indonesian since centuries. Anti-tumor activity of each herbs in this Jamu Formula have been scientifically proven. Malek, *et al.* from the Institute of Biological Sciences, University of Malaysia find 7 active compounds in Temu Mangga rhizomes, namely: *(E) -labda-8 (17), 12-dien-15,16-dial (1), (E) -15.16-bisnor-labda-8 (17), 11-dien-13-one (2), zerumin A (3), β-sitosterol, curcumin, and bis-demethoxycurcumin 8 demethoxycurcumin.* In vitro study of this active compound has revealed its cytotoxic effect in breast tumor cells. Green tea leaves, mistletoe and white turmeric contain compounds that function as potent antioxidants, have the ability in cleaning free radicals and inhibit the growth of tumor (Lotulung, *et al.*, 2008; Shrubsole, *et al*., 2009; Ali, *et al.*, 2013; Nasution and Roza, 2013). Empirically Bidara Upas rhizomes used to treat tumors, sore throat, typhoid fever and cough (Widyaningrum and Rahmad, 2011). Yan, *et al*. in 2010 managed to isolat 8 phenolic compounds, including new compounds salicylic acid derivative SA 2-O-β-D- (3 ', 6'-dicaffeoyl) –glucopyranoside.

CONCLUSION

The results showed that Jamu had the potential to improve QoL in patients with benign breast tumor.

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REFERENCES

Andrykowski, M.A., Curran, S.L., Studts, J.L., Cunningham, L., Carpenter, J.S., McGrath, P.C., *et al.,* 1996, Psychosocial Adjustment and Quality of Life in Women with Breast Cancer and Benign Breast Problems: A Controlled Comparison, *J. Clin. Epidemiol.,* **49**(8), 827-834.

Ali, M.A., Chanu, V. and Devi, L.I., 2013, Scurrula Parasitica L.: A Medicinal Plant with High Antioxidant Activity, *Int. J. Pharm. Pharm. Sci*., **5**(Suppl 1), 34-37.

Deane, K.A. and Degner, L.F., 1998, Information Needs, Uncertainty, and Anxiety in Women Who had a Breast Biopsy with Benign Outcome, *Cancer Nurs*., **21**(2), 117-126.

Goehring, C. and Morabia, A., 1997, Epidemiology of Benign Breast Disease, with Special Attention to Histologic Types, *Epidemiol. Rev*., **19**(2), 310-327.

Guray, M. and Sahin, A.A., 2006, Benign Breast Diseases: Classification, Diagnosis, and Management, *Oncologist*, **11**(5), 435-449.

Kementrian Kesehatan, RI, 2010*, Peraturan Menteri Kesehatan Republik Indonesia. Nomor 003/MENKES/PER/I/2010, Tentang Saintifikasi Jamu dalam Penelitian Berbasis Pelayanan Kesehatan*, Jakarta: Departemen Kesehatan RI.

Lindley, C., Vasa, S., Sawyer, W.T. and Winer, E.P., 1998, Quality of Life and Preferences for Treatment Following Systemic Adjuvant Therapy for Early-stage Breast Cancer, *J. Clin. Oncol.*, **16**(4), 1380-1387.

Lotulung, P.D., Kardono, L.B. and Kawanishi, K., 2008, Antioxidant Compound from the Rhizomes of Kaempferia rotunda L., *Pak. J. Biol. Sci*., **11**(20), 2447-2450.

Malek, S.N.A., Lee, G.S., Hong, S.L., Yaacob, H., Wahab, N.A., Faizal Weber, J.F. *et al.,* 2011, Phytochemical and Cytotoxic Investigations of Curcuma mangga Rhizomes, *Molecules*, **16**(6), 4539-4548.

Nasution, P. and Roza, R.M., 2013, *Aktivitas Antibakteri Ekstrak Daun Benalu (Scurulla Sp) Yang Tumbuh Pada Beberapa Inang Terhadap Pertumbuhan Salmonella typhi*, Pekanbaru: Universitas Riau.

RAND Health, 2016, *36-Item Short Form Survey (SF-36) Scoring Instructions*, http://www.rand.org/health/surveys_tools/mos/36-item-short-form/scoring.html

Shrubsole, M.J., Lu, W., Chen, Z., Shu, X.O., Zheng, Y., Dai, Q., *et al*., 2009, Drinking Green Tea Modestly Reduces Breast Cancer Risk, *J. Nutr*., **139**(2), 310-316.

Ware Jr, J.E. and Sherbourne, C.D., 1992, The MOS 36-item Short-form Health Survey (SF-36): I. Conceptual Framework and Item Selection, *Med. Care*, **30**(6), 473-483.

Widyaningrum, H. and Rahmat, A., 2011, *Kitab Tanaman Obat Nusantara,* Yogyakarta: Media Pressindo.

Yan, J., Bi, H.H., Liu, Y.Z., Zhang, M., Zhou, Z.Y. and Tan, J.W., 2010, Phenolic Compounds from Merremia umbellata Subsp. orientalis and Their Allelopathic Effects on Arabidopsis Seed Germination, *Molecules*, **15**(11), 8241-8250.