



Effectiveness Of Siddha Formulations In Treating Breast Cancer: An Evidence-Based Case Series

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ABSTRACT

Breast cancer is one of the top-ranked cancers affecting women in the world. Although there are approved standard regimens for treatment, due to toxicological side effects, there is a demand for novel anti-cancer drugs with minimal adverse effects leading to the emergence of Indian Systems of Medicine. Natural treatment modalities such as Siddha, Ayurveda and Unani are emerging and have been given gaining importance in recent times. They have been in vogue for centuries together and have shown better prognosis over a period of time with lesser toxicity and admiring oncological results. The presentation is an evidence-based report on the cure of breast cancer using Siddha chemotherapeutic formulations.

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INTRODUCTION

Breast Cancer is the second most common cancer in the world, with over 2 million new cases in 2018 (WHO, 2018). It is ranked as leading cancer among Indian females (Malvia et al., 2017). Invasive

ductal carcinoma is the most common histological type of breast carcinoma.

Chemotherapy is an established and recommended treatment regimen. However, the biggest concerns of chemotherapy and the use of synthetic compounds such as drug resistance and escalating toxic side effects make patients shift towards effective and alternative therapies (Liao et al., 2013). Traditional systems play a crucial role in meeting the demands of the global health care. India is well-known for its traditional medicine systems. The recognized Indian systems of medicines include Siddha, Ayurveda, Unani, Yoga, Naturopathy and Homeopathy (Poornima and Efferth, 2016). The treatment and management of such dreadful diseases have been described in classical Siddha texts. The great scientists-Siddhars, exposed the reality of nature through their spiritual knowledge, expe-

rience and observation, which threw light on the origin of new growth or lumps. Siddha medicine has its own fundamental principles, anatomy, physiology, pathology and an extensive set of pharmacopoeia. Siddha medicine embodies the essence of Ayurveda (plant extract), Unani, Acupressure (sensitive points), Reiki (energy field), etc. (Shukla and Saraf, 2011). Phytochemicals derived from traditional medicinal plants have been found to possess anti-cancer and chemoprotective effects and have proven to be safer for long-term use in cancer patients. They also possess nutritional and antioxidant effects (Gladys et al., 2013).

Here we describe the evidence-based treatment of breast cancer who have disease controlled using Siddha formulations. Patient confidentiality and anonymity was maintained, and the work was carried as per ethical policies.

CASE HISTORY

Case 1

A 50-year-old woman (post-menopausal) patient presented with complaints of a lump in the right breast of one-year duration. She had a history of Nipple retraction of 3 months duration. No significant past or personal history. She attained menarche at 13 years, menopause at 49 years and is uniparous. She had a strong family history of breast cancer, with her younger sister treated for breast cancer. On physical examination, 5 cm*4 cm right breast tumor was present in the central sector with Peaud'orange skin appearance. Right axillary nodes were enlarged and mobile. A mammogram was suggestive of a BIRADS IV lesion in the right breast. Tru Cut Biopsy of the right breast lesion revealed Invasive Mammary Carcinoma. PET scan revealed a 4.0 cm*3.2 cm *2.9 cm lesion in the upper outer quadrant of the right breast with axillary nodal and distant metastasis in the lungs. She received Siddha medication for one year, followed by Right Modified Radical Mastectomy with axillary lymph node clearance. Histopathology of the specimen showed an Invasive Mammary Carcinoma Ductolobular variant (Ductal 60%, Lobular 40%). Immunohistochemical pattern favoring Luminal Her2 PR positive molecular type of Invasive mammary cancer. Pathological findings revealed the size of the lesion 6 cm*4 cm*3.3 cm in the right upper outer quadrant (single focus), Grade II with Nottingham's Histologic Score of 6 based on Glandular Differentiation (2), Nuclear Pleomorphism (2) and Mitotic Rate (2). Ductal carcinoma in-situ and high-grade comedonecrosis were present. Margins free of tumor. 12 axillary nodes out of 18 dissected were positive. The Lymph Node

Ratio (LNR) that is the ratio of total lymph nodes involved to examined, was found to be 66.67%. Extra nodal extension and Lymphovascular invasion were present. Staged as ypT₃N_{3a}. The patient was continued on Siddha medications after the surgery.

Case 2

A 62-year-old female was diagnosed to have carcinoma left breast. In view of the clinical and radiological T2 status, the patient was suitable for Breast conservation surgery. After metastatic workup and the disease being non-metastatic, the patient underwent left breast Oncoplastic Surgery (Breast conservation surgery with reconstruction). Post-operative histopathology was suggestive of Grade II (Nottingham's Histologic Score of 6) Invasive Mammary Carcinoma NST, 3cm*3cm*1cm margins free tumor; pT2 disease and node-negative. Immunohistochemical analysis favored Luminal B molecular subtype. She was advised adjuvant chemotherapy and radiotherapy to the whole breast in view of the breast conservation surgery. The patient underwent radiotherapy to the breast and subsequently opted for Siddha medications out of fear of chemotherapy side effects.

Case 3

A 44-year-old woman presented with complaints of breast swelling since, 2 months. The obstetric history of the patient reveals that she is Uniparous and is known to have irregular menstrual cycles. The patient has an aunt with a history of Breast cancer. She was diagnosed with non-metastatic invasive lobular carcinoma left breast. She received four cycles of neoadjuvant chemotherapy considering clinical cT3 status. Postneoadjuvant chemotherapy patient had 2cm*1cm residual swelling in the central quadrant with mobile axillary nodes. She underwent a left modified radical mastectomy. The histopathological report indicated Nottingham's score 6 ypT1a pN1a disease with lymphovascular invasion (LVI), 2cm*1.6cm*1.5cm in size, and margins were free tumor. Immunohistochemical analysis favored HER 2 Neu molecular subtype of breast cancer. Ductal carcinoma in situ was present. 3 out of 24 examined nodes were positive. The Lymph Node Ratio (LNR) was found to be 12.5%. Subsequently, she received four cycles of chemotherapy (Adriamycin and Cyclophosphamide). She received one more cycle of chemotherapy (Docetaxel) following surgery but could not tolerate further chemotherapy treatment regimen due to chemotoxicity and switched to further treatment by Siddha medication. The Siddha formulations administered for all the patients commonly included ThangaParpam (TPM), RasagendhiMezhugu (RGM), PoornaChan-

drodayam (PCM), often called as Poor man's gold, NandhiMezhugu (NM), IdivallathyMezhugu, SivanarAmirtham, Chitramoolakuligai, Ramabaanam, Mahavallathyelagam and Kandhagarasayanamall of which are listed in the Siddha Formulary of India.

The drugs are given in combinations for targeted action on tumor cells and to overcome any type of resistance. Weekly once drug holiday is given for metabolic adjustments.

According to the latest PET-CT report of the first patient, no residual/ recurrent disease was observed in the right chest wall, and no significantly enlarged/ metabolically active lymph nodes were seen in the right axillary region with decreased metabolic activity in mediastinal nodes and lung (Figures 1 and 2). In spite of the upfront metastasis to the lungs, the patient is surviving for the past 3 years with stable disease and well-preserved general condition. The second patient is doing well for the past one year on Siddha medication. The third patient tolerated Siddha treatment well and disease-free for the past one year. The patients did not experience any untoward reaction or ill effects during the entire tenure of treatment. They are on regular follow up with good disease control till date.

DISCUSSION

Cancer is one of the deadliest diseases in the society, the burden of which is increasing day by day. Breast cancer is a life-threatening disease among the women worldwide. The Siddha formulations act on multiple biochemical pathways (Lekha et al., 2018). These medicines provide nutrition and aim in improving the patient's quality of life (Joseph et al., 1999; Diwanay et al., 2004). The antioxidant activity of such drugs helps in dissolving any ill effects of treatment (lower toxicity) (Tagliaferri et al., 2001). Bhasmas, or ashes or Paspams, have been used by the Siddha practitioners since at least the 7th century. Gold ash is considered to be a magic bullet for precisely treating cancer.

RasagandhiMezhugu is a unique Siddha preparation from the reference "PULIPANI VAIDYAM 500" by "PULIPANI SIDDHAR". It is proposed to be an effective treatment in Dhunmangisam (meaning tumor or cancer). It is a herbo-mineral composition consisting of 48 ingredients, including 8 metals (Ranga et al., 2004).

Pre-clinical in-vitro studies on RGM imply that the compound induced maximum cytotoxicity in MDA-MB-231 breast cancer cells followed by those malignant cells of colon origin, namely COLO205 and HCT 116 when tested at different concentrations. The

studies concluded a promising growth inhibition effect that was directly proportional to the concentration used (Baskaran et al., 2017).

In a similar study, chloroform extract of RGM (cRGM) also showed its effects on Human Papilloma Virus (HPV) positive cervical cancer cells such as ME-180 and SiHa at very low doses in comparison with RGM extracted from other solvents. Anti-apoptotic effects were also revealed in features such as chromatin condensation, nuclear fragmentation, and the formation of apoptotic bodies (Riyasdeen et al., 2012).

Toxicity studies of RGM in Wistar rats conclude that there were no significant signs of toxicity seen in the treated group. RGM, when administered to HIV patients for a period of one year, did not produce any evident toxicity (Tharakan et al., 2010).

The use of Indian Systems of medicines has increased since the last decade (Olaku et al., 2013). The system has identified over 700 herbs and several herbal mineral drug preparations in the form of Rasayanam, Lehiyam, Mezhugu, Chenduram, Parpam, Mathirai, etc., that are useful in the treatment and prevention of many diseases (Sowmyalakshmi et al., 2005). The fundamental principle of Siddha medicines is to strengthen and equip patient's own T- cells in a way that they are capable of fighting the life-threatening disease (James Vaidyan, 2018).

The drugs administered to the patients have been evident in the scientific literature on its therapeutic use in cancer and anti-tumor activity.

Some studies have also demonstrated the effectiveness of ayurvedic drugs given in combinations for those cancer patients treated with chemotherapy for alleviating the toxic side effects caused by the drugs and thereby improving their quality of life and survival time. Further, these herbo-mineral formulations and supportive approaches have led to a significant reduction in drug toxicity and associated complications (Deshmukh et al., 2014; Mondal et al., 2014; Metri et al., 2013). This is a literature evidence on treatment of cancer patients treated by radical oncological surgeries and adjuvant medication similar to the current presentation.

Although the literature on Siddha medication and chemotherapeutic agents are vast and separate, there is still a paucity of literature on a conglomeration of the two modalities of treatment. Our series typically highlights our patients treated by aggressive surgery with adequate oncological clearance followed by Siddha medication. All our patients tolerated the Siddha medications well with good quality of life without compromising the survival.

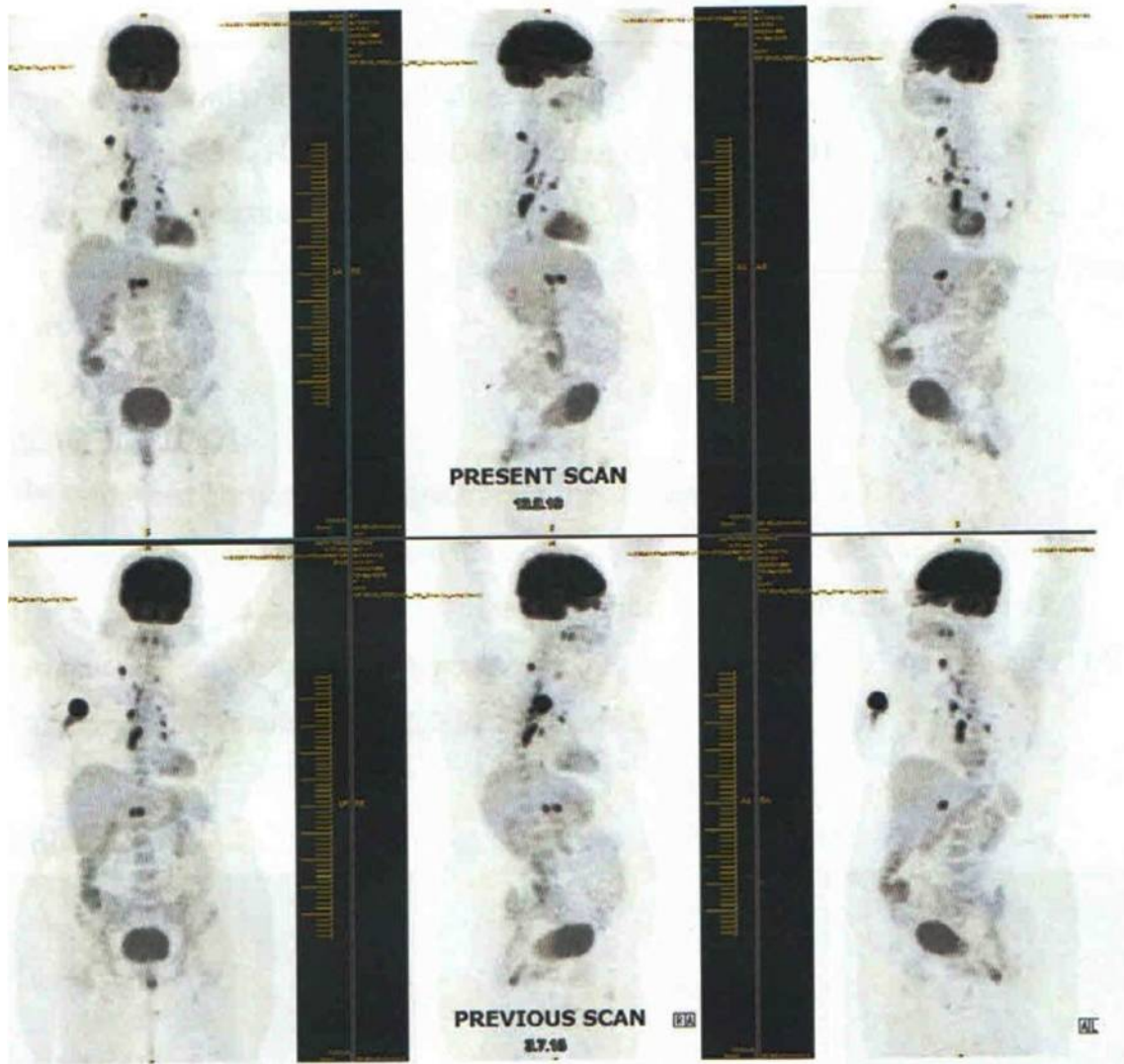


Figure 1: 18F-FDG PET/CT images showing comparative results of recent and earlier scan

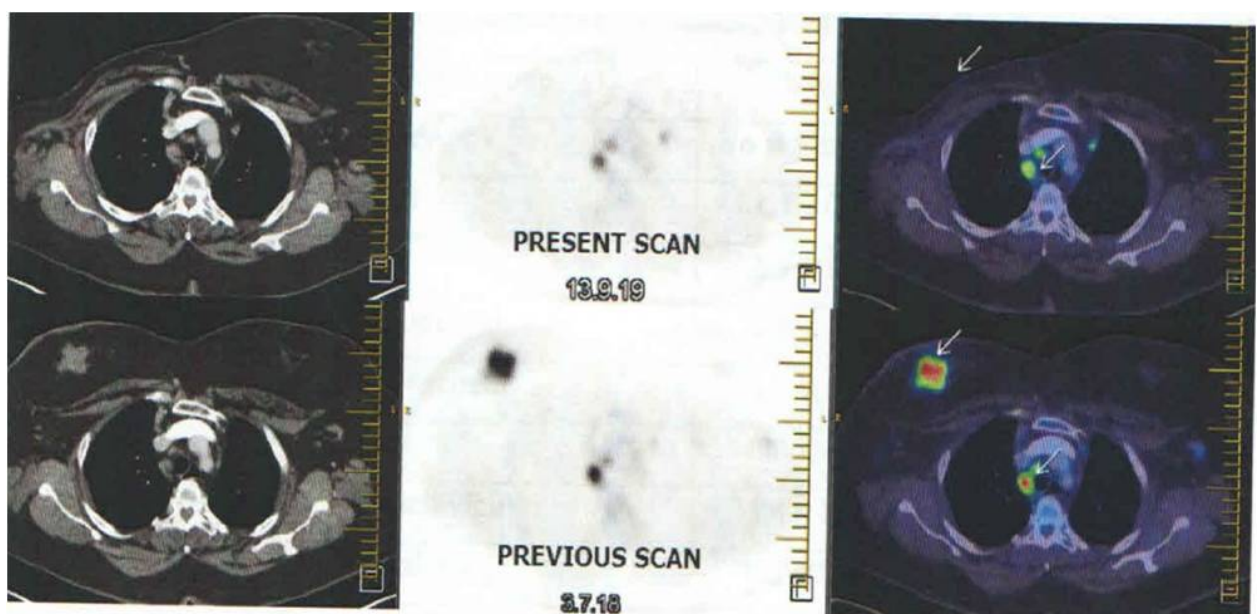


Figure 2: 18F-FDG PET/CT scan report showing comparative results of recent and earlier scan of the breasts

Even the patient with metastatic disease has stable disease and in very good general condition. Our pre-clinical studies have shown the benefit of RGM in breast cancer lines compared with standard chemotherapeutic agents.

CONCLUSIONS

Although there are established standard treatment regimen for breast cancer, some patients hesitate to undergo for the fear of bearing the ill effects of the treatment due to psychological issues. Hence, there is a need for alternate effective therapies that are devoid of side effects for the treatment and management of such aggressive diseases. Siddha medications definitely has a major role. Classically, the drugs are given in combinations for targeted action to overcome any type of resistance, ultimately paving the path for success. The clinical benefit of improving the side effect profile and survival of the patients with cancer by combining Siddha medicine and modern medicine needs further randomized studies. The combination of all modalities may improve the survival and cure the patients with this deadly disease.

Patient consent - Obtained

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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REFERENCES

- Baskaran, J., Gnanamani, A., Stanley, V., Stanley, S. A. 2017. Studies on the Anticancer Potential (GI50) of the Siddha Formulation, RasagenthiMezhugu on Human Cell Lines. *Journal of Chemical and Pharmaceutical Research*, 9(10):254–257.
- Deshmukh, V., Kulkarni, A., Bhargava, S., Patil, T., Ramdasi, V., Gangal, S., Sardeshmukh, S. 2014. Effectiveness of combinations of Ayurvedic drugs in alleviating drug toxicity and improving quality of life of cancer patients treated with chemotherapy. *Supportive Care in Cancer*, 22(11):3007–3015.
- Diwanay, S., Chitre, D., Patwardhan, B. 2004. Immunoprotection by botanical drugs in cancer chemotherapy. *Journal of ethnopharmacology*, 90(1):49–55.
- Gladys, R., Arasi, R. K., Elangovan, S., Mubarak, H. 2013. Screening of siddha medicinal plants for anti cancer activity - A review. *J Appl Pharm Sci*, 3(8):176–182.
- James Vaidyan 2018. Indian treatment for Leukemia and other cancers. *J Cancer Science Therapy*, 10:1.
- Joseph, C. D., Praveenkumar, V., Kuttan, G., Kuttan, R. 1999. Myeloprotective effect of a non-toxic indigenous preparation Rasayana in cancer patients receiving chemotherapy and radiation therapy. A pilot study. *Journal of experimental & clinical cancer research: CR*, 18(3):325–329.
- Lekha, G. S., Aparna, S., Kasirajan, N., Kanagarajan, A. 2018. Diagnosis and Treatment of Cancer–Siddha Perspective. *J Res Sid Med*, 1(1):3–14.
- Liao, G., Apaya, M. K., Shyur, L. F. 2013. Herbal medicine and acupuncture for breast cancer palliative care and adjuvant therapy. *Evid Based Complement Alternat Med*, 2013:437948.
- Malvia, S., Bagadi, S. A., Dubey, U. S., Saxena, S. 2017. Epidemiology of breast cancer in Indian women. *Asia-Pacific Journal of Clinical Oncology*, 13(4):289–295.
- Metri, K., Bhargav, H., Chowdhury, P., Koka, P. S. 2013. Ayurveda for chemo-radiotherapy induced side effects in cancer patients. *Journal of stem cells*, 8(2):115–129.
- Mondal, J., Panigrahi, A. K., Khuda-Bukhsh, A. R. 2014. Conventional chemotherapy: problems and scope for combined therapies with certain herbal products and dietary supplements. *Austin J Mol Cell Biol*, 1(1):10.
- Olaku, O., Zia, F., Santana, J. M., White, J. D. 2013. The National Cancer Institute best case series program: a summary of cases of cancer patients treated with unconventional therapies in India. *Integrative cancer therapies*, 12(5):385–392.
- Poornima, P., Efferth, T. 2016. Ayurveda for Cancer Treatment. *Med Aromat Plants (Los Angel)*, 5(5):1–3.
- Ranga, R. S., Girija, R., Sathishkumar, S., Akbarsha, M. A., Thirugnanam, S., Rohr, J., Chendil, D. 2004. Rasagenthilehyam (RL) a novel complementary and alternative medicine for prostate cancer. *Cancer chemotherapy and pharmacology*, 54(1):7–15.
- Riyasdeen, A., Periasamy, V., Paul, P., Alshatwi, A., Akbarsha, M. 2012. Chloroform Extract of RasagenthiMezhugu, a Siddha Formulation, as an Evidence-Based Complementary and Alternative Medicine for HPV-Positive Cervical Cancers. *Evid Based Complement Alternat Med*, 2012(136527).
- Shukla, S., Saraf, S. 2011. Fundamental aspect and basic concept of siddha medicines. *Systematic Reviews in pharmacy*, 2(1):48–54.

Sowmyalakshmi, S., e Alam, M. N., Akbarsha, M. A., Thirugnanam, S., Rohr, J., Chendil, D. 2005. Investigation on SemecarpusLehyam—a Siddha medicine for breast cancer. *Planta*, 220(6):910–918.

Tagliaferri, M., Cohen, I., Tripathy, D. 2001. Complementary and alternative medicine in early-stage breast cancer (2001, February). *In Seminars in Oncology. WB Saunders*, 28(1):121–134.

Tharakan, S. T., Kuttan, G., Kuttan, R., Kesavan, M., Rajagopalan, K. 2010. Toxicity Studies of Sidha Medicine-Rasagandhi Mezhugu. *The open toxicology journal*, 4(1):43–50.

WHO 2018. GLOBOCAN - Global Cancer Observatory. *World Health Organization*. Accessed on: 04 March 2018.