

# Management of Adverse Effects of Chemotherapy in Ovarian Cancer through Ayurveda: A Case Report

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## ABSTRACT

Cancer is a condition where abnormal cells multiply uncontrollably and can invade nearby tissues. Only 30% of women with ovarian cancer can expect to live for more than 5 years, as 70% of cases are diagnosed at an advanced stage. Ovarian malignancies account for about 15 to 20% of genital malignancies. Surgical intervention and chemotherapy are conventional measures used to treat these conditions. However, due to the specific side effects of chemotherapy, there is a high demand for safer ayurvedic interventions. Hereby, the authors present, a 54-year-old female patient who was diagnosed with ovarian cancer and advised to undergo chemotherapy. After completing six cycles of chemotherapy, administered once every four weeks for six months, the patient experienced complaints of anorexia, nausea, vomiting, epigastric pain, and a burning sensation in the stomach and lower limbs. Despite taking antacids and other suggested medications by the oncologist, the symptoms did not subside. Therefore, the patient sought *ayurvedic treatment*. Shaman Ayurvedic Chikitsa (*Jawahar Mohra Pisti, Keharva Pisti, Swarna Makshik, Mukta Pisti, Shatavari Ghrita, Turmeric Kwath, and Pathya Vihar*) were prescribed for three consecutive months. After 5-7 days, the patient noticed significant relief in the aforementioned symptoms and felt better. The frequency of vomiting, complaints of anorexia, and burning sensation were also significantly reduced. After three months of ayurvedic treatment, the functions of *Apana Vayu, Samana Vayu, and Pachaka Pitta* were normalised through appropriate treatment. The selected combination of ayurvedic medicines provided relief due to their *Vata-Pitta Shamak, Sheeta guna, and Pittahara* properties, which alleviated the burning sensation. In present case report, the aforementioned ayurvedic prescription significantly reduced the adverse effects of chemotherapy and radiotherapy due to its *Vata-Pitta Shamak and Pittahara* properties.

**Keywords:** Anorexia, Ayurvedic treatment, Carcinoma, Nausea, Ovarian, Vomiting

## CASE REPORT

In present case, a 54-year-old female patient with a postoperative case of ovarian carcinoma approached the Kayachikitsa Outpatient Department (OPD) in 2022 with chief complaints of loss of appetite, nausea, vomiting, pain in the epigastric region, and a burning sensation in the stomach. She also experienced increased frequency of micturition and a burning sensation in her lower limbs for the past six months. She attained menarche at the age of 14 years and had regular cycles with a 28-day interval and a four-day bleeding cycle. At the time of cancer diagnosis in her right ovary, she underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy on July 13, 2019, followed by six cycles of chemotherapy. After chemotherapy, the grading of her symptoms is as shown in [Table/Fig-1] [1].

Complaints	Grade	Duration
Loss of appetite (Aruchi)	5	Since six months
Epigastric pain (Udarshool)	3	
Nausea (Hrillasa)	5	
Vomiting (Chhardi)	4	
Lassitude (General weakness/Kalama)	5	
Burning sensation (Daha)	5	
Constipation (Vibandha)	3	

[Table/Fig-1]: Chief complaints of patient.

\*The gradings of symptoms is measured as per the scales given in textbook "Developing guidelines for classical research methodology in Ayurveda" by Baghel MS and Rajagopala S [1]

Radiological investigations, specifically a Contrast Enhanced Computed Tomography (CECT) abdomen, revealed bilateral heterogeneously enhancing adrenal masses with the left-sided mass showing a solid appearance and the right-sided mass having

a mixed solid cystic appearance. The findings also suggested mild peritoneal thickening and metastatic seeding. Further cytopathology revealed cohesive tumour cell clusters identified as adenocarcinoma. The hereditary cancer panel genes indicated carcinoma of the ovary with pathogenic variations in genes. The drug used for chemotherapy in present case was albumin-bound paclitaxel (nab-paclitaxel, Abraxane), administered intravenously in six cycles once a month, for a total duration of six months. To alleviate the symptoms and maintain a healthy lifestyle, an ayurvedic treatment protocol was administered as described in [Table/Fig-2].

S. No.	Medicine	Dose	Frequency	Adjuvant
1.	<i>Mukta Pisti 125 mg+ Kherawa Pisti 125 mg+ Swarna Makshik 125 mg+ Jawahar Mohra Pisti 125 mg</i>	500 mg	Twice a day after meal	With honey
2.	<i>Shatavari Ghrita</i>	5 gm	Twice a day after meal	With milk
3.	<i>Lavanbhaskar Churna</i>	3 gm	Once a day after meals	Butter milk
4.	<i>Suvarna SootshekharRasa</i>	250 mg	Twice a day after meal	With honey
5.	<i>Turmeric Kwath</i>	30 mL	Once a day in morning	—
6.	<i>Avipattikar Churna</i>	10 gm	At time of sleep	With lukewarm water

[Table/Fig-2]: Treatment protocol.

The therapeutic outcome of the patient after completing three months of treatment is outlined in [Table/Fig-3] [1]. A follow-up was conducted after one month of treatment to assess disease recurrence or any other conditions. The improvement in the patient's quality of life before and after treatment is described in [Table/Fig-4] [2].

S. No.	Symptoms	Before treatment	After 15 days	After 1 months	After 3 months
1	Loss of appetite	5	2	Absent	Absent
2	Epigastric pain (VAS)	3	Absent	Absent	Absent
3	Nausea	5	3	1	Absent
4	Vomiting	4	2	1	Absent
5	Lassitude (General weakness)	5	3	1	Absent
6	Constipation	4	Absent	Absent	Absent
7	Burning sensation	5	3	1	Absent

**[Table/Fig-3]:** Therapeutic outcome of the patient.

\*The gradings of symptoms were measured as per the scales given in textbook "Developing guidelines for classical research methodology in Ayurveda" by Baghel MS and Rajagopala S [1]. VAS: Visual analogue scale

S. No.	Quality of life domains	Before treatment	After treatment
1	Well-being at emotional level	4	20
2	Well-being at functional level	5	25
3	Well-being at physical level	2	27
4	Well-being at the social level	6	21

**[Table/Fig-4]:** The improvement of the quality of life.

Assessment was done with the help of Functional Assessment of Cancer Therapy-General (FACT-G) scale [2]

## DISCUSSION

The World Health Organisation (WHO) recently declared cancer to be the most dangerous killer in the world, one of the most deadly challenges that has been rapidly spreading in the 21<sup>st</sup> Century [3]. Ovarian cancer is a type of cell growth that develops in the ovaries. These cells have the ability to invade healthy body tissue and multiply quickly. Its incidence is increased in females, especially in those aged over 50 years [4]. Ovarian cancer is the leading cause of death in India [5], despite conventional treatments like surgery, chemotherapy, and radiotherapy.

The typical course of chemotherapy for epithelial ovarian cancer involves three to six cycles of treatment, depending on the stage and type of ovarian cancer. A cycle is a schedule of regular doses of a drug, followed by a rest period [6]. Chemotherapy is commonly used in practice for conservative purposes. However, it is highly associated with various side effects, such as anorexia, nausea, vomiting, gastric trouble, severe fatigue, hair loss, and burning sensation, among others.

The treatment of cancer using modern regimens is notorious for being accompanied by drug-induced toxic side effects, which highlights the need for a perfect cure for the illness from the complementary and alternative medicine system. The primary purpose of ayurvedic therapy is to determine the underlying cause of a condition. The therapeutic methods mentioned in the classical texts of Ayurveda can be categorised into the following four groups: *Rasayana Chikitsa* (restoration of normal function), *Roganashani Chikitsa* (disease cure), *Prakritisthapani Chikitsa* (health maintenance), and *Naishthiki Chikitsa* (spiritual approach) [7].

The present study demonstrates the promising and significant role of Ayurveda in managing these side effects. A similar case study entitled "Management of chemotherapy adversity through Ayurveda: An experience" [8] concludes that the side effects of chemotherapy may be controlled by Ayurveda adjunct therapy.

Cancer is characterised in Ayurveda as either inflammatory or non-inflammatory swellings. They could either be *Arbuda* (tumour) or *Granthi* (nodular/glandular swellings), which are comparable to minor or major neoplasms, respectively. According to ayurvedic literature, *Apana Vayu* is located in the *Shroni* (pelvis), *Vasti* (bladder), *Medhra* (penis), and *Uru*. *Apana Vayu* is responsible for excreting mala (feces) outside of the body. To restore normalcy to their functions, *Apana Vayu*, *Samana Vayu*, and *Pachaka Pitta* must be treated according to the symptoms. When *Apana Vayu* becomes vitiated, their regular operations are impeded [8].

The treatment principles mentioned in the texts of Ayurveda can be effectively formulated by considering all these scenarios of pathogenesis and symptoms that correct *Apana Vayu*, *Agnimandhya*, *Pitta Shamak*, *Sheeta guna*, *Pittahara*, and *Rasayana* properties. In this instance, the patient experiences *Udara Gaurava* (abdominal heaviness) and *Vibandha* (constipation), which are signs of vitiated *Apana Vayu*. However, because *Samana Vayu* is directly above *Apana Vayu*, over time these symptoms worsen and result in *Samana Vayu Dushti* and vitiation of *Pachaka Pitta*, causing *Udarshula* (abdominal pain), *Chardi* (vomiting), and *Udara Gaurava* (abdominal heaviness) along with burning sensation [9].

The patient was given a combination of *Mukta pisti*, *kherawa pisti*, *Swarna Makshik*, and *Jawahar Mohra Pisti*, considering their *Sheeta guna* and *pittahara* properties that revive *Udaradaha*. *Haridra* [9] (Turmeric) has *Kapha Vata Shamak* qualities, which are responsible for its anti-inflammatory effects (*Shothghna*). It possesses *Ushna Virya* and *Katu Vipaka*, which strengthen *Pachak pitta* and aid in digestion.

In *Haridra*, curcumin, turmerone, and polysaccharides are the active ingredients that primarily exhibit anticancer properties. Therefore, these active compounds prevent Tumour Necrosis Factor (TNF)-induced Akt activation, which is where metastasis growth occurs, and thereby suppress tumour angiogenesis, helping prevent the recurrence of cancerous cells.

*Suvarna Sootshekhar Rasa*: It is a mixture of herbs and minerals, mainly containing drugs with *Deepana*, *Pachana*, *Garvishnashak*, and *Shulaghna* properties [10]. They have *Katu*, *Tikta*, and *Madhur Rasa*, *Tikshna*, *Vyavayi*, *Laghu*, *Ruksha*, *Vikasi Guna*, *Ushna Virya* with *Madhur* and *Katu Vipaka*. Hence, this formulation mainly works as *Pachana* of *Aama* (undigested food). Thereby, it reduces the increased sourness and penetrating power of *Pitta* and relieves epigastric pain and burning sensation.

*Shatavari ghrita* has *Rashayan*, *Vatapitta Shamak*, and *Balya* properties [11]. Due to these properties of *Shatavari*, it nourishes all the depleted *Dhatus*.

*Lavanbhaskar churna* [12] has the property of *Vatanulomana*, decreasing *Udara daha* by neutralising the increased *Pachaka Pitta* and thereby decreasing the burning sensation. *Avipattikar Churna* [13] has *Sukhvirechak* property because of *Trivrutta*. So, considering the patient's reduced physical strength, it is used for *Mrudu Virechana* to regulate *Pitta*. It helps smoothly clear the large and small intestines without inducing any excessive weakness.

## CONCLUSION(S)

The present case study demonstrates the significant role of Ayurveda in successfully managing the adverse effects of chemotherapy. Therefore, based on the therapeutic outcomes of this study, it can be concluded that ayurvedic remedies play a crucial and important role in managing the adverse effects of chemotherapy in cases of ovarian cancer. It helps improve the quality of life of patients suffering from such conditions after undergoing chemotherapy. No side effects were observed in the patient, indicating that it can be considered a safe and effective therapy. Based on the successful outcome of ayurvedic intervention in the management of ovarian cancer, it is necessary to plan further clinical trials with a larger sample size and longer duration, if required in the future.

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