EVALUATION OF EFFECT OF KRIMIGHNA BASTI UPAKRAM ON QUALITY OF LIFE IN CANCER PATIENTS OF FEMALE GENITAL ORGANS (TRYAWARTA YONI)

Shivani Sanjeev Gavande[1*], S.P. Sardeshmukh[2], Abhijit H. Joshi[3], Vineeta V. Deshmukh[4], Shweta R. Gujar[5], Sandeep Chavan[6], Vasanti R. Godse[7], Swapna J. Kulkarni[8], Bhagyshree Sardeshmukh[9], Nilambari Sardeshmukh[10]

[1] Ph.D Scholar, Ayurved-Kayachikitsa, Tilak Maharashtra Vidyapeeth, Pune, Maharashtra, India. drshivanigavande@gmail.com
[2] Director, BSDT's Integrated Cancer Treatment and Research Centre, Wagholi, Pune, Maharashtra, India. ictrcpune@gmail.com
[3] HOD, Department of Ayurved, Tilak Maharashtra Vidyapeeth, Pune, Maharashtra, India. ayutmv@gmail.com
[4] Deputy Director, BSDT's Integrated Cancer Treatment and Research Centre, Wagholi, Pune, Maharashtra, India. vineeta_deshmukh@yahoo.co.in
[5] Assistant Director, BSDT's Integrated Cancer Treatment and Research Centre, Wagholi, Pune, Maharashtra, India. shwetagujar76@gmail.com
[6] Research Officer, Ayurvedic Drug Testing and Standardization & BSDT's Integrated Cancer Treatment and Research Centre, Wagholi, Pune, Maharashtra, India. ictrcdrugresearch2016@gmail.com
[7] Assistant Director, BSDT's Integrated Cancer Treatment and Research Centre, Wagholi, Pune, Maharashtra, India. vasanti.godse@gmail.com
[8] Assistant Director, BSDT's Integrated Cancer Treatment and Research Centre, Wagholi, Pune, Maharashtra, India. kulkarniswapna@ymail.com
[9]SRF, BSDT's Integrated Cancer Treatment and Research Centre, Wagholi, Pune, Maharashtra, India. drsbhagysashree@gmail.com
[10] SRF, BSDT's Integrated Cancer Treatment and Research Centre, Wagholi, Pune, Maharashtra, India. drnilambaripatil@gmail.com

Abstract

The disease cancer is not mentioned in Ayurvedic texts as a single disease, but similar diseases like Dushta Vrana, Dushta Granthi, Dushta Arbuda are mentioned in Ayurvedic texts. Cancers of female genital organs namely cervical, vaginal, uterine, fallopian tube and ovarian cancers also show similarity with some diseases mentioned in Yonivyapada Adhyaya in Charak Samhita. Apart from these 2 similarities, certain factors like Kleda, Krimi, and Dushta Shukra – Stree Beeja Dushti are also responsible in Samprapti of cancers of Tryawarta Yoni. Cancers of female genital organs, though treated with conventional treatment, are at higher risk of recurrence or metastasis. Moreover, conventional treatment and the disease itself cause hampered Quality of life of cancer patients of female genital organs. Hence there is an urgent need of alternative treatment for controlling cancer and improving Quality of Life of patients of cancers of female genital organs. Considering Krimi as a major risk factor in pathogenesis of cancers of female genital organs, Panchakarma treatment in the form of Krimighna Basti Upakrama is used in our institute in these patients to serve this purpose. Present case – control study was planned to assess effectiveness of Krimighna Basti Upakrama on deworming action, controlling disease process and Quality of life. Selection of the ingredients was on the basis of its anticancer activity and deworming activity.

Keyword: Cancer, Ayurved, Tryawarta Yoni, Conventional Treatment, Female Genital Organs, Panchakarma, Krimi, Basti

INTRODUCTION

Cancers in female genital organs are having more prevalence rate than any other types of cancers. Cancer incidence in India is calculated to be around 70-90 per 100000 populations. From population based registry, age adjusted incidence rate is 52-128 per 100000 females. 80% of cancers in female occur in the age of 35-65 years and 3.5%to 4.5% occur in childhood. According to India Globocan 2018, 5 years prevalence[1] of cancer of cervix uteri is 34.59%, of ovarian cancer is 12.33, of cancer of corpus uteri is 5.17, of vaginal cancer is 1.75% and of vulvar cancer is 1.29%.

Cancers of female genital organs include cervical, vaginal, uterine, fallopian tube and ovarian cancer. These cancers though not directly mentioned in Ayurvedic texts, similar conditions like Dushta Vrana, Dushta Granthi, Dushta Arbud, 20 types of Yoni Vyapada are described in Ayurvedic Samhitas in terms of their

Nidan Panchak, treatment principles, various formulations, recommended diet and lifestyle modifications and prognosis. Understanding these aspects of Anukta Vyadhi like cancers of female genital organs is essential for confirming direction for the treatment of these dreadful diseases. In this article, an effort has been made to understand concept of Tryawarta Yoni, concept of Tryawarta Yoni Vyapada, causative factors and signs and symptoms of cancers of Tryawarta Yoni from Ayurvedic as well as Allopathic perspective and probable Samprapti for these cancers.

AIM

Evaluation of Effect of Krimighna Basti Upakram on Quality Of Life in Cancer Patients of Female Genital Organs (Tryawarta Yoni)

OBJECTIVES

1) To assess the effect of Krimighna Basti Upakram (Ayurvedic Panchakarma Chikitsa) on signs and symptoms of cancer of organs of female genital system.
2) To assess the effect of Krimighna Basti Upakram (Ayurvedic Panchakarma Chikitsa) on *Sanjaat Krimi Lakshanaani.*
3) To assess the effect of Krimighna Basti Upakram (Ayurvedic Panchakarma Chikitsa) on Quality of Life of patients suffering from cancer of female genital system.
4) To assess the effect of Krimighna Basti Upakram (Ayurvedic Panchakarma Chikitsa) on disease status of patients suffering from cancer of female genital system.

MATERIALS AND METHODS

1) MATERIALS

A) For literature study

a) Classical Ayurvedic texts like Nirukt, Amarakosh, Vachaspatyam, Shabdakalpadruma, Girvan Laghukosh, Apte Dictionary, Ayurvedeeya Shabdakosha, Rugved, Atharvaveda, Charaka Samhita, Sushruta Samhita, Ashtanga Hrudaya, Ashtanga Sangraha, and Harit Samhita and

b) Books and articles of modern medical system of medicine related to cancer epidemiology and various websites of etymology of their various sign and symptoms of various gynecological cancers and their conventional treatment.

c) Related sources from authentic website.

B) For clinical work

a) Patients suffering from cervical, vaginal, ovarian and endometrial cancers of all stages and grades.

C) Drug Review

For Matra and Niruha Basti Upakrama following drugs were used.

Matra Basti containing a blending of Nimba Taila, Nirgundi Taila and Karanja Taila in definite proportion and Niruha Basti containing Krimighna Kwath consist of Vidang, Musta, Triphala, Shigru, Dantimool, Madanphal and Yawakut. Madhu and Saindhav were used as Prakshepa.

Table 1: Properties of drugs used in Krimighna Basti Upakrama from Ayurvedic perspective

Dravya	Latin Name	Ayurvedic Properties				
		Ras	Guna	Veerya	Vipaka	Prabhava
Nimba	***Azadirachta indica***	Tikta	Laghu, Ruksha, Sheeta	Sheeta	Katu	Krimighna
Nirgundi	***Vitex negundo Linn***	Katu, Tikta.	Laghu,Ruksha.	Ushna	Katu	
Karanja	***Pongamia pinnata***	Katu, Tikta	Laghu,Ushana, Snigdha	Ushna	Katu	
Vidanga	***Embelia ribes***	Tikta, Katu	Laghu,Ushana, Teekshna	Ushna	Katu	**Krimighna**
Musta	***Cyprus rotundus***	Tikta, Katu, Kashaya.	Laghu, Ruksha	Sheeta	Katu	**Krimighna**
Amalaki	***Phyllanthus embelica***	Amla, Madhura, Tikta, Katu, Kashaya	Guru,Ruksha, Sheeta	Sheeta	Madhura	
Bibhitaki	***Terminalia bellirica***	Kashaya	Laghu, Ruksha	Ushna	Madhura	
Haritaki	***Terminallia chebula***	Kashaya, Tikta, Madhura, Amla, Katu	Laghu, Ruksha	Ushna	Madhura	
Shigru	***Moringa Olifera***	Katu, Tikta	Laghu, Ruksha .Teekshna	Ushna	Katu	
Danti	***Baliospermum montanum***	Katu	Guru, Ruksha, Teekshna	Ushna	Katu	Virechan
Yawa	***Hordeum vulgare***	Kashay, Madhur	Guru,Ruksha, Mrudu, Pichchil	Sheeta	Katu	Virechan
Madan	***Randia dumentorum***	Kashay, Madhur, Tikt, Katu	Laghu, Ruksha	Ushna	Katu	Vamak
Saindhava *(Rock Salt)*		Lavana	Snigdha,Laghu,Sukshma,Sheeta	Sheeta	Madhur	Chakshyushya
Madhu (Honey)		Madhura,Kashaya	Laghu,Ruksha,Sheeta,Yogawahi,	Sheeta	Madhura	

2) Methodology:

Total 184 cancer patients of female genital tract were examined. Among them 70 patients undergoing Shaman chikitsa were selected on the basis of inclusion criteria. These 70 patients, eligible for Basti chikitsa, were paired with identical stage, grade, conventional treatment and duration of Ayurvedic treatment. Paired patients were randomly selected for their enrolment in study (n=35) and control (n=35) group.

The gradation of symptoms of female genital cancers and Sanjaat Krimi Lakshanani i.e. symptoms related to worm infestations were done according to CTCAE gradations. The patients having more than 3 symptoms of Sanjata Krimi lakshanani were selected for study group.

Study group patients were treated with 7 days course of Krimighna Basti Upakrama along with Shaman chikitsa, whereas control group patients were treated with only Shaman chikitsa as Chandraprabha Vati, Praval Pishti Vati 500mg each morning and evening and, Arogyavardhini Vati and Triphala Guggulu 500mg each after lunch and after dinner daily dose.

First 3 Basti were given as Matra basti followed by Niruha and Matra Basti alternatively. Treatment schedule was organized for 7days.

Krimighna basti upakram consist of 5 Matra basti and 2 Nirooh Most of the herbs included in krimighna basti are having anthelminthic property. Deworming property of Nimb (*Azadirachta indica*), Nirgundi (*Vitax negundi Linn*). Karanj (*Pongamia pinnata*), Vidang (*Embelia ribes*), Musta (*Cyprus rotundus*), Bibhitaki (*Terminalia bellirica*), Haritaki (*Terminalia chebula*), Amalaki (*Phyllanthus embelica*), Shigru (*Moringa Olifera*), and Danti (*Baliospermum montanum*) are mentioned in Bhavprakash Nighantu. Additionally, Karanja (*Pongamia pinnata*), Shigru (*Moringa Olifera*) and Danti (*Baliospermum montanum*) are quoted as Yonidoshahrut (beneficial in the diseases of female genital organs) kledanashak property of Trifala and Yawa (*Hordeum vulgare*) are well documented. Cancers manifest when shotha (inflammation) and Vran (ulcers) left untreated. Thus shotha nashak (anti-inflammatory) and Vrana nashak (antiulcer) herbs like Karanja (*Pongamia pinnata*), Shigru (*Moringa Olifera*), Danti (*Baliospermum montanum*), Madanphal (*Randia dumentorum*), Nimb (*Azadirachta indica*) and Yawa (*Hordeum vulgare*) are used in Matra and Nirooh basti. Madhu (honey) used as Prakshep dravya in krimighna Niruha basti acts as catalyst (Yogavahi) and additionally beneficial in Shotha, Vran and Kleda .Similarly Saindhav is useful for quick action of herbs in Niruha Basti due to its Sukshma Guna.

Study group patients were treated with Krimighna Basti Upakrama along with continued Shaman Chikitsa while control group patients were not treated with Krimighna Basti Upakrama. Quality of life questionnaire assessed by patients themselves was taken at time point a, b (at the end of treatment i.e. on 7th day) and c to assess the quality of life with functional score, symptom score and global score. Karnofsky score to assess well-being was also noted at time points a, b and c.

Symptoms of gynecological cancers and Sanjat Krimi Lakshanas (signs and symptoms of worm manifestation) were also assessed at time points a, b and c.

Biochemical investigations like Haemogram, LFT, KFT, CRP and tumour marker CA125 (in ovarian cancer patients) were assessed before treatment (at time point a) and one month after treatment (at time point c). Stool examination was carried out at time points a and c.

Total plan of work was executed for 30 days.

Criteria For Inclusion

1) Known diagnosed cases of cancers of organs of female genital system i.e. Ovarian cancer, Endometrial cancer, Vaginal cancer and cervical cancer with all stages (I to IV) and grades (I to III) were included in both groups .
2) Patient between age 21 years to 80 years.

Criteria For Exclusion

1) Pregnant and lactating females
2) Age below 21 years and above 80 years
3) Patients undergoing chemotherapy and radiotherapy were excluded in both the groups.
4) Patients having any major illness.

Table 2: Regimen of Krimighna Basti Upakrama

Procedure	Selected drugs	Dose and duration	Dose frequency
Anuvasana Basti			Together for first 3 days
	Nimba Taila	20 ml	
	Nirgundi Taila	20 ml	
	Karanja Taila	10 ml	
Niruha Basti	Niruah Basti - Vidanga, Musta, Triphala, Shigru, Dantimoola, Madanphal and Yavkut Kwatha Praksheparth – Madhu Saindhav	350 ml 10 grams	On 5th and 7th day
Anuvasana Basti			On 4th day and 6th day
	Nimba Taila	30 ml	
	Nirgundi Taila	30 ml	
	Karanja Taila	10 ml	

Analysis and Interpretation:

Analysis of data collected was done by 2 ways –

1. Demographic data
2. Clinical data (includes observations on symptoms, Quality of Life and biochemical parameters)

Analysis and interpretation of demographic data-

a) Age wise distribution of patients-

In our study, about 34.28 % patients of each study and control group have age between 51 to 60 years i.e. menopausal age having high score to diagnose cancers. Childbearing age is having less evidence of cancers as compared to peri menopausal and post-menopausal age. During old age, there were fewer patients found .Also it is observed that they are good tolerance for the disease

Age-wise distribution of patients of cancers of female genital organs

Age groups	Study Group		Control Group	
	No. of patients	%	No. of patients	%
31-40	8	22.86	4	11.43
41-50	8	22.86	9	25.71
51-60	12	34.28	12	34.28
61-70	5	14.29	6	17.14
71-80	2	5.71	4	11.43
	35	**100**	**35**	100

b) Socio economic variance in groups-

In our study 60% and 80% patients of study and control group respectively are from middle socioeconomic status. In Indian scenario, cervical and vaginal cancers are common in women who lie in low socio economic class, whereas ovarian and uterine cancers are common in middle and high economic class respectively. Ovarian and uterine cancer patients are more in our study (i.e.22/35) 62% proportion in middle socio economic class in evident.

Socio-economic status	No. of patients in study group / %	No. of patients in control group / %
Low	7 (20 %)	3 (8.57 %)
Middle	21 (60 %)	28 (80 %)
High	7 (20 %)	4 (11.43 %)
Total	35 (100%)	35 (100%)

c) Stage and Grade wise distribution of patients-

Among 15 patients of ovarian cancer in study group, 8 patients (53.33%) had stage III disease,5 patients (33.33%) had stage I disease whereas 1 patient (6.67%) each had stage II and stage IV disease. Control group patients have almost similar pattern of stages of ovarian cancer i.e. 7 patients (50%) had stage III, 5 patients (35.71%) had stage I and 1 patient (7.15%) each had stage II and stage IV disease.

11 patients of cervical cancer were recruited in each study and control group. Among them 1 patient (9.09%) and 2 patients (18.19%) patients had stage I disease; 1patient (9.09%) and 4 patients (36.36%) had stage II disease.7patients (63.64%) and 4 patients (36.36%) had stage III disease whereas 2 patients (18.18%) and 1 patient (9.09%) had stage IV disease from study and control respectively.

In case of uterine cancer, 7 patients were recruited in study group and 8 patients in control group. Among 7 patients of study group, 4 patients(57.14%) had stage I cancer.one patient (14.29%) had stage II cancer and 2 patients (28.57%) had stage III cancer. 2 patients (25%) each from all 4 stages were recruited in control group.

Total 4 patients of vaginal cancer were equally recruited in study and control group (i.e. 2 in each group).Among them 1 patient (50%) each from study group had stage II and stage IV cancer, whereas 1 patient (50%) each from control group had stage I and stage III cancer.

Distribution of patients of cancers of female genital organs according to stage of the disease

Stage	Ovarian cancer		Cervical cancer		Uterine cancer		Vaginal cancer	
	Study group (No., %)	Control group (No., %)	Study group (No., %)	Control group (No., %)	Study group (No., %)	Control group (No., %)	Study group (No., %)	Control group (No., %)
I	5 (33.33%)	5 (35.71%)	1 (9.09 %)	2 (18.19 %)	4 (57.14 %)	2 (25 %)	0 (%)	1 (50%)
II	1 (6.67%)	1 (7.15 %)	1 (9.09 %)	4(36.36%)	1(14.29%)	2(25%)	1 (50%)	0
III	8(53.33%)	7(50%)	7(63.64%)	4(36.36%)	2(28.57%)	2(25%)	0	1(50%)
IV	1 (6.67%)	1(7.14%)	2(18.18%)	1 (9.09%)	0	2(25%)	1(50%)	0
Total	**15 (100%)**	**14**	**11**	**11**	**7**	**8**	**2**	**2**

Stage of cancer at initial diagnosis is based on TNM classification. It depends upon the size of tumor, nodal involvement of cancer and metastatic status .Decision about the line of conventional treatment (surgery, chemotherapy and radiotherapy) and prediction about the prognosis of patient depends on the stage of the cancer. In our study, we have recruited almost similar number of each stage of patients in study and control group as aggressiveness of cancer and treatment response depend upon the stage of cancer.10 patients each of stage I cancer and 4 patients each of stage IV cancer lie in study and control group.4 and 7 patients of study and control group respectively had stage II cancer whereas 17 and 14 patients of study and control group respectively had stage III cancer.

Histological **grade** denotes how the cancer cells differ from normal cells. Grade I (well differentiated cancer) denotes the cancer cell resemble normal cell and are not growing rapidly. It is also called as low grade cancer. Moderately differentiated or Grade II cancer means cancer cells does not look like normal cells and are growing further than normal cells. Grade III (poorly differentiated cancer) means cancer cells look abnormal and may grow or spread more aggressively. This aggressiveness of cancer can be more precisely explained on the basis of grading of cancer. We recruited almost equal number of patients in each grade which helped us to assess response of Ayurvedic treatment on equally distributed cohort in both study and control group. 3 patients each of study and control group had grade I cancer.15 patients of study group and 14 patients of control group had grade II cancer whereas 17 patients of study group and 18 patients of control group had grade III cancer.

Distribution of patients of cancers of female genital organs according to grade of the disease

Grade	Ovarian cancer		Cervical cancer		Uterine cancer		Vaginal cancer	
	Study group (No., %)	Control group (No., %)	Study group (No., %)	Control group (No., %)	Study group (No., %)	Control group (No., %)	Study group (No., %)	Control group (No., %)
I	1(6.66%)	2(14.29 %)	0	0	2(28.57%)	0	0	1 (50%)
II	4(26.67%)	2(14.29%)	6 (54.55%)	6 (54.55%)	4 (57.14%)	6 (75%)	1 (50%)	0
III	10 (66.67%)	10(71.42%)	5 (45.45%)	5(45.45%)	1(14.29%)	2 (25%)	1 (50%)	1 (50%)
Total	**15**	**14**	**11**	**11**	**7**	**8**	**2**	**2**

d) Distribution of patients as per conventional treatment taken –

Disease status, quality of life and progression of cancer patients mainly depend upon conventional treatment taken by the patient. Thus we recruited almost similar number of patients in study and control group, taking into consideration their past conventional treatment.

Treatment of choice in ovarian cancer is surgery followed by chemotherapy and in very few cases radiotherapy. In our study, 13 patients (86.88%) from study group and 12 patients (85.71%) from control group were treated with surgery and chemotherapy .1 patients (6.66%) from study group and 2 patients (14.29%) of control group were treated with only surgery, whereas 1 patient (6.66%) in study group was treated with combination of surgery and radiation.

Patients of cervical cancers are treated with surgery, radiotherapy and chemotherapy, alone or in combination depending on the stage of the disease. In our study,1 patient (9.09%) of control group was treated with chemotherapy alone.1 patient (9.09%) of study and control group each was treated with radiotherapy alone.1patient (9.09%) of study group and 2 patients (18.18%) of control group were treated with a combination of surgery and chemotherapy.2 patients (18.18%) of control group were treated with surgery and radiotherapy.5 patients (45.46%) each of study and control group were treated with radiotherapy along with chemotherapy .and 4 patients (36.37%) of study group were treated with all three conventional treatment modalities ,i.e. surgery, chemotherapy and radiotherapy.

Standard treatment for uterine cancer includes surgery, chemotherapy and radiotherapy depending upon stage and grade of the disease. In our study, among 7 patients of uterine cancer, in study group, 1 patient (14.29%) each was treated with surgery, surgery and chemotherapy and with combination of all three conventional treatments. whereas 4 patients (57.13%) were treated with surgery and radiotherapy. Among 8 patients of uterine cancer in control group,1 patient (12.5%) each was treated with only surgery and a combination of surgery chemotherapy and radiotherapy.2 patients (25%) were treated with surgery and radiotherapy and 4 patients (50%) were treated with surgery and chemotherapy.

Patients of vaginal cancer are also treated with surgery, radiotherapy and chemotherapy as per stage and grade of cancer. In our study, 2 patients each of study and control group were recruited. Among 2 patients of study group, 1 patient (50%) was treated with radiotherapy alone and another was treated with surgery, chemotherapy and radiotherapy. 1 patient (50%) of control group was treated with surgery and chemotherapy and another was treated with only Ayurvedic treatment.

Conventional treatment	Ovarian cancer		Cervical cancer		Uterine cancer		Vaginal cancer	
	Study group - no. of patients, %	Control group - No. of patients, %	Study group - no. of patients, %	Control group - No. of patients, %	Study group - no. of patients, %	Control group - No. of patients, %	Study group - no. of patients, %	Control group - No. of patients, %
Surgery	1 (6.66%)	2 (14.29%)	0	0	1 (14.29%)	1 (12.5%)	0	0
Chemotherapy	0	0	0	1 (9.09%)	0	0	0	0
Radiotherapy	0	0	1 (9.09%)	1 (9.09%)	0	0	1 (50%)	0
Surgery + Chemotherapy	13 (86.88%)	12 (85.71%)	1(9.09%)	2 (18.18%)	1 (14.29%)	4 (50%)	0	1 (50%)
Surgery + Radiotherapy	1 (6.66%)		0	2 (18.18%)	4 (57.13%)	2 (12.5%)	0	0
Chemotherapy + Radiotherapy	0	0	5 (45.45%)	5 (45.46%)	0	0	0	0
Surgery + Chemotherapy + Radiotherapy	0	0	4 (36.37%)	0	1 (14.29%)	1 (12.5%)	1 (50%)	0
Only Ayurvedic treatment	0	0	0	0	0	0	0	1 (50%)
Total no. of patients	**15**	**14**	**11**	**11**	**7**	**8**	**2**	**2**

2.) Analysis and interpretation of Clinical Data –

1. Symptoms of Gynecological cancers-

i) Abdominal pain– Abdominal pain is a presenting symptom of many patients of gynecological cancers and persists for a long period. Abdominal pain is mainly observed in ovarian and uterine cancer. It is also a symptom of Kaphaja, Sannipatika, Aticharanaa and Paripluta Yonivyapad. This symptom mainly occurs due to accumulation of doshas, which are eliminated with Basti Upakrama.

Study group patients shows extremely significant results in abdominal pain at time point b and c when compared with time point a, whereas similar results are seen at only time point c in control group patients.

ii) Backache (Prushthashool)-It is generally observed as a pressure symptom due to tumour in the pelvic region. Similarly the symptom persist even after the conventional treatment.as a consequence of fatigue and per vaginal discharge.

Backache is observed in many patients of gynecological cancers as a pressure symptom of a tumor /accumulated doshas or a consequence of per vaginal discharge and debility. It is symptom of Paripluta and Mahayoni Yonivyapad.

Basti chikitsa helps to eliminate accumulated doshas in pelvic region through anus and relieves backache. Statistically, similar results are found for back ache to that of abdominal pain.

iii) Fatigue (Sadana) - Fatigue is a cancer related symptom, as well as the symptom due to advance effect of chemotherapy and radiotherapy and remains for longer period. Fatigue is not

significant in intergroup analysis, while it is extremely significant (p<0.0001) at both time points b and c and in both groups i.e. study and control in intragroup analysis.
Like all types of malignancies patients of gynecological cancers suffer from fatigue as a symptom of disease or adverse effect of conventional treatment. Acharya Charak describes this symptom in Vataja, Pittaaj, Sannipatik, Paripluta and Mahayoni Yonivyapad.

Symptoms	Abdominal pain		Backache		Fatigue	
Time points	b	c	b	C	b	c
Study Group	1.9±1.2	1.2±0.9	2.0±1.1	2.0±1.1	1.9±1.0	1.2±0.8
Control Group	2.3±0.8	1.3±0.6	2.4±0.8	2.4±0.8	2.2±0.9	1.3±0.8

Basti Upakrama is beneficial for remaining toxins, improving digestion and metabolism and thus restore energy. Thus Basti Upakrama is found to be effective in fatigue. Additionally Nimba (Azadirachta indica) used in Basti Chikitsa has a property 'Shrama Nashana' whereas Triphala has a characteristic Rasayana action.
Comparative analysis grading of symptoms – Per vaginal discharge, vaginal burning and vaginal itching.
iv) Per vaginal discharge (Yonigata strava) –onigata Strava is a common presentation of gynecological cancers
In our study, extremely significant results for per vaginal discharge are seen at the end of basti chikitsa (time point b) and one month after basti chikitsa (at time point c) in intragroup analysis. Additionally significant results are obtained in study group at time point b .The results prove effectiveness of Krimighna Basti Upakram on per vaginal discharge in gynecological cancer patients.
v) Vaginal burning (Yonidaha) –It is one of the symptoms of Pittaaj, Sannipatik and Paripluta Yonivyapada. Patients of gynecological disorder with Pitta dominant Samprapti suffer from vaginal burning.
In our study, very significant results for vaginal itching are seen in time point b and c respectively; when compared with time point a, in intra group analysis.
vi) Vaginal itching (Yoni Kandu) -Vaginal itching is manifestation of Krimi as per Ayurvedic perspective and many patients suffering from diseases of female genital organs including cancers of female genital organssuffer from vaginal itching.
In intergroup analysis, it is very significant (p=0.009) at time point b .In intra group analysis, it is extremely significant (p=0.0001) at time point b and very significant at (p=0.004) at time point c in study group .In control group, it is extremely significant p<0.0001) at time point c and not significant at time point b.

Symptoms	p/v discharge		Vaginal burning		Vaginal itching	
Time points	b	c	b	c	b	c
Study Group	0.2 ± 0.7	0.1±0.4	0.6±1.0	0.4±0.6	0.7±1.0	0.5±0.9
Control Group	1.1 ± 1.1	0.6±0.7	1.1±1.1	0.6±0.7	1.3±1.0	0.6±0.7
p value	0.0002	0.0007	0.05		0.009	

b) Sanjaat Krimi Lakshanani
From Ayurvedic perspective, Krimi (worms) are considered as one of the evident cause of various diseases, including diseases of Tryawarta yoni. Gynecological cancers are one of them. Treatment of choice of Krimi is Apakarshana (Elimination with Shodhan chikitsa). So Krimighna Basti Upakram is selected with the aim of deworming in the study. Symptoms of worm manifestation are fever (Jwar), discoloration (Vivarnata), pain (Shool), heart diseases (Hrudroga), body ache (Sadan), nausea (Bhaktadwesh) and diarrhea (Atisar). Effect of Krimighna Basti Upakrama is assessed on these symptoms at the end of basti upakram (7^{th} day –i.e.at time point b) and one month after Krimighna Basti Upakrama (at time point c).
Among Sanjaat krimi lakshna, Fever and Hrudroga were eliminated for assessment as basti upakram is contraindicated in these two conditions.
Among Sanjaat krimi lakshna, Vivarnata (discoloration), Shool (pain), Sadan (body ache), Bhrama (vertigo), Bhaktadwesh (nausea), and Atisar (diarrhea) were selected to assess the effect of Krimighna Basti Upakrama. As discussed earlier, Abhyantar krimi are the causative factors of various gynecological disorders including gynecological malignancies, from Ayurvedic perspectives.

Symptoms	Shool		Sadan		Bhrama	
Time points	b	c	b	C	b	c
Study Group	2.0±1.1	1.1±0.9	2.0±0.8	1.1±0.7	1.1±1.1	0.6±0.9
Control Group	2.4±0.8	1.5±0.6	2.3±0.5	1.4±0.5	0.7±0.8	0.3±0.5
p value		0.04	0.02			

In our study, Sanjaat krimi lakshanani like Vivarnata, Sadan, Bhaktadwesh and Atisar are statistically significant in study group at time point b and c when compared with time point a and not significant in control group patients. The result of this data supports our hypothesis that Krimighna Basti Upakram is beneficial in management of symptoms of gynecological cancers, worm infestation and thus quality of life of patients.

Symptoms	Vivarnata		Bhaktadwesh		Atisar	
Time points	b	C	b	C	b	c
Study Group	1.6±0.8	1.1±0.9	2.3±0.9	1.4±0.7	0.1±0.5	0.1±0.2
Control Group	1.9±0.7	1.0±0.6	2.5±0.6	1.6±0.6	0.4±0.8	0.2±0.6

c) Quality of Life of patients of gynecological cancers
A quality of life questionnaire derived from EORTC is used to assess the effectiveness of krimighna basti Upakram on quality of life of patients of female genital cancers. It is measured in terms of functional score (to assess the day to day functions/activities), symptom score (to assess the symptoms) and global score (to assess the general wellbeing) .Functional and global score are statistically significant at time point b and c, whereas global score is significant at time point c. In our study, functional, symptom and global score are calculated at the time point b and c and compared in study and control group.
Difference of each score between time point b and a, also c and a are calculated and significance is recorded in intragroup analysis. In this analysis, all 3 scores are extremely significant (p=<0.0001) at time point c in study group whereas only global score is extremely significant (p=<0.0001) in control group. At time point b, functional and symptom score are extremely significant (p=0.0007) and (p=0.0006) respectively. And global score is significant (p=0.03) in study group. However in control group, Global score is found to be extremely significant (p=<0.0001).

B) Quality of life assessment (QLQ)
Comparative analysis grading of Functional ,symptomatic and global score stating the quality of life at the end of Basti treatment (time point b) and 1 month after Basti treatment (time point c) in study and control groups in of patients of gynaecological cancers

Functional, global and symptomatic score of study and control group

QLQ	Functional score		Symptom score		Global score	
Time point	b	c	b	C	b	c
Study Group	86±13.9	92±10.1	16.8±15.6	8.2±11.1	71.7±21.3	86.2±13.8
Control Group	73.5±15.5	85.8±11.2	25.8±16.4	16±10.2	67.6±16.5	79.3±14.5
p value	0.0007	0.01	0.02	0.003		0.04

d) Karnofsky Performance Score (KPS)
This is used for measuring wellbeing and quality of life of cancer patients. It is recorded by physician on 0 to100 scale at different time points to assess treatment response.100 score denotes normal activities, healthy status with no evidence of disease while 0 score indicates mordant stage.
Overall improvement and maintenance of Kernofsky score is seen in all patients of study group and 31 patients (88.57%) of control group at time point b.
In our study maintained and increased Kernofsky score in all study group patients at both time point b and c indicates effectiveness of Krimighna Basti Upakram on wellbeing of patients suffering from gynecological cancers.

Kernofsky score:Distribution of patients of cancers of female genital organsaccording to Karnofsky score in patients of cancers of female genital organs

Kernofsky score	Time point b		Time point c	
	Study group	Control group	Study group	Control group
	No .of patients (%)	No. of patients (%)	No. of patients (%)	No .of patients (%)
Increased	11 (31.43%)	9 (25.71%)	14 (40%)	14 (40%)
Decreased	0	4 (11.43%)	0	4 (11.43%)
Stable	24 (68.57%)	22 (62.86%)	21 (60%)	17 (48.57%)
Total	35 (100%)	35 (100%)	35 (100%)	35 (100%)

e) Weight -
Weight remained almost constant at the time points b and c in both study and control groups indicative of effectiveness of Krimighna Basti Upakrama on maintaining weight.

e) Biochemical Parameters-
Biochemical parameters such as Hemoglobin, WBC, Platelets, Serum Bilirubin (Total), SGOT, SGPT, Alkaline phosphatase, Serum Creatinine, Blood urea, CRP, CA125 (in patients of ovarian cancer) were studied. Also stool examination for presence of worms and ova were studied. These parameters were assessed at time points a and c.

Investigation	Hb	
Time points	a	c
Study Group	11.8±1.6	11.8±1.3
Control Group	11.0±1.6	11.0±1.4
p value	0.02	0.01

Investigation	WBC	
Time points	A	c
Study Group	6515±2314	6660±2408
Control Group	8067±5901	6736±2102

Investigation	Platelets	
Time points	a	C
Study Group	245171±77420	247057±107796
Control Group	304171±161171	245994±90596
p value	P=0.05	

Investigation	S. Bilirubin (Total)	
Time points	A	c
Study Group	0.7±0.3	0.6±0.2
Control Group	0.8±0.8	0.8±0.1

Investigation	SGOT		SGPT		S. Alkaline Phosphatase	
Time point	A	c	a	c	A	c
Study Group	27±10.8	28±17.2	24±13.2	23±14.5	92±53.3	94±60.5
Control Group	42±134.6	38±119.7	42±136.2	37±120.3	100±53.4	85±39.3

Investigations	S. Creatinine		BUN	
Time point	a	c	a	C
Study group	1.0±0.2	0.9±0.2	21.5±7.4	20.4±7.5
Control group	1.0±0.8	0.9±0.4	25.9±18.3	21.7±12.5

Investigation	CRP	
Time point	a	C
Study Group	5.6±6.1	4.6±4.8
Control group	36.4±40.1	28.9±37.9
p-value	P=<0.0001	P=0.0004

Investigation	CA125	
Time point	a	c
Study group	93.4±477.5	9.6±16.7
Control group	139.7±315.2	80±161.6
p value		0.01

Investigation	Stool Examination	
Time point	a	c
Study Group	0.2±0.4	0.0±0.0
Control Group	0.1±0.4	0.1±0.2

Hemoglobin was significantly increased (p=0.01), CA125 in ovarian cancer patients was significantly reduced (p=0.01) and presence of ova in stool was significantly disappeared (p=0.01) during intergroup analysis at time point c (i.e.one month after Krimighna Basti upakram. Rest of biochemical parameters remain in normal range at time point c. Examination of stool was done to assess the presence of ova at time point a and c. Grading was done to report as 0 for negative report and 1 for positive report.
Examination of stool was done to assess the presence of ova at time point a and c. Grading was done to report as 0 for negative report and 1 for positive report. In study group, only 5 patients had positive report for worm infestation which was negative at time point c. In control group, no patients were found of presence of worm.

Rationale behind selection of Krimighna Basti Upakram

Gynecological cancers i.e. cervical cancer, ovarian cancer, uterine cancer, vaginal cancer are the diseases of Tryawarta Yoni and are well elaborated as Yoni vyapad. Dushta Vran, Dushta Vranashotha, Dushta Granthi, Dushta Arbud, Dushta Visarpa, Dushta Naadivrana which are manifestations of untreated dushta Vran shotha, shows similar to cancer. Acharya Sushrut has clearly stated the derivation of Arbud that it appears at specific organ, where vitiated doshas get accumulated.

Carminative effect of musta (Cyprus rotundus) and Amalaki (Phyllanthus embelica) is beneficial to relieve abdominal pain.

Backache is observed in many patients of gynecological cancers as a pressure symptom of a tumor /accumulated doshas or a consequence of per vaginal discharge and debility.

It is symptom of Paripluta and Mahayoni Yonivyapad. Basti Chikitsa helps to eliminate accumulated Doshas in pelvic region through anus and relieves Backache.

Basti Upakrama is beneficial for remaining toxins, improving digestion and metabolism and thus restore energy. Thus basti upakram is found to be effective in fatigue. Additionally Nimb (Azadirachta indica) used in basti chikitsa has a property 'Shrama nashana' whereas Triphala has a characteristic Rasayan action.

Vitiated Kapha Dosha, Kled and Krimi are major factors responsible for kapha dominant per vaginal discharge in gynecological cancers. Karanja Taila is used in Matra Basti and Shigru (Moringa Olifera), Danti (Baliospermum montanum), and Vidang (Embelica ribes) have direct impact on per vaginal discharge as stated in Bhavprakash Nighantu.

In our study, extremely significant results for per vaginal discharge are seen at the end of basti chikitsa (time point b) and one month after basti chikitsa (at time point c) in intragroup analysis. Additionally significant results are obtained in study group at time point b .The results prove effectiveness of Krimighna Basti Upakram on per vaginal discharge in gynecological cancer patients.

Vaginal burning (Yonidaha) – It is one of the symptoms of Pittaaja, Sannipatika and Paripluta Yonivyapad. Patients of gynecological disorder with pitta dominant samprapti suffer from vaginal burning. Nimba (Azadirachta indica) used in Krimighna Matra Basti nd Musta (Cyprus rotundus), Bibhitaki (Terminalia bellirica), Amalaki (Phyllanthus embelica), Danti (Baliospermum montanum) and Yawa(Hordeum vulgare) used in Niruha Basti are beneficial in relieving vaginal burning. This action is seen due to Sheet (cold) property and Pitta Shamak (Pitta pacifying) action of these herbs.

In intragroup analysis of our study, significant results are obtained for vaginal burning at time point b .Moreover extremely significant results are seen at time point b and c, in study group patients during intragroup analysis.

vi) Vaginal itching (Yoni Kandu) –

This symptom is seen in many patients of gynecological cancers and is described as a ymptom of Kaphaja, Aticharanaa and Arajaskaa Yoni Vyapada. Kled and Krimi are responsible for itching. Nimba (Azadirachta indica) and Karanja (Pongamia pinnata) are used in Krimighna Matra basti possesses Krimighna (anthelminthic) and Kandughna (relieves itching) action. Hence beneficial in vaginal itching. Triphala and Haritaki are also useful in vaginal itching.

In our study, very significant results for vaginal itching are seen in time point b and c respectively; when compared with time point a, in intra group analysis.

b) Sanjaat Krimi Lakshanani

Among Sanjaat krimi lakshna, Fever and Hrudroga were eliminated for assessment as basti upakram is contraindicated in these two conditions.

Among Sanjaat krimi lakshna, Vivarnata (discoloration), Shool (pain), Sadan (body ache), Bhrama (vertigo), Bhaktadwesh (nausea), and Atisar (diarrhea) were selected to assess the effect of Krimighna Basti Upakrama. As discussed earlier, Abhyantar krimi are the causative factors of various gynecological disorders including gynecological malignancies, from Ayurvedic perspectives.

In our study, Sanjaat krimi lakshanani like Vivarnata, Sadan, Bhaktadwesh and Atisar are statistically significant in study group at time point b and c when compared with time point a and not significant in control group patients. The results of this data supports our hypothesis that Krimighna Basti Upakrama is beneficial in management of symptoms of gynecological cancers, worm infestation and thus Quality of Life of patients.

e) Biochemical Parameters-

Biochemical parameters such as Hemoglobin, WBC, Platelets, Serum Bilirubin (Total), SGOT, SGPT, Alkaline phosphatase, Serum Creatinine, Blood urea, CRP, CA125 (in patients of ovarian cancer) were studied. Also stool examination for presence of worms and ova were studied. These parameters were assessed at time points a and c.

Hemoglobin was significantly increased ($p=0.01$), CA125 in ovarian cancer patients was significantly reduced ($p=0.01$) and presence of ova in stool was significantly disappeared ($p=0.01$) during intergroup analysis at time point c (i.e.one month after Krimighna Basti upakram. Rest of biochemical parameters remain in normal range at time point c. Examination of stool was done to assess the presence of ova at time point a and c. Grading was done to report as 0 for negative report and 1 for positive report.

Examination of stool was done to assess the presence of ova at time point a and c. Grading was done to report as 0 for negative report and 1 for positive report. In study group, only 5 patients had positive report for worm infestation which was negative at time point c. In control group, no patients were found of presence of worm.

CONCLUSIONS

The present research work was designed to explore the role of Krimighna Basti Upakram in the management of Gynecological cancers. This treatment was based on Ayurvedic concept of Krimi as an important factor in pathogenesis of gynecological cancers, diseases akin to Yonivyapada and role of Krimighna Basti Upakrama in its' treatment.

The clinical study concluded -

- Krimighna Basti Upakram is highly effective in management of symptoms of cancers of female genital organs namely per vaginal discharge and vaginal itching.
- It is also effective in symptoms vaginal burning, body ache and Sanjaat Krumi Lakshna especially on discolorations. Effectiveness of Basti treatment on these symptoms also persists even after 1 month indicative of long lasting effect of the treatment.
- Treatment protocol of Krumighna Basti Upakram is beneficial in controlling disease progression of ovarian cancer patients, proved by significant reduction in CA 125, an ovarian cancer specific tumour marker, one month after Krumighna Basti treatment in study group patients.

- Significantly disappearance of ova in stool examination, 1 month after Krumighna Basti Upakram is conclusive of deworming effect of Krumighna Basti Upakram.
- Quality of life of patients treated with Krumighna Basti Upakram is notably improved in terms of improvement of well-being and reduction in cancer related symptomatology, which is reflected in functional, global and symptom scores of QLQ C30.

General Management of 20 Yoni Vyapad

Though all 3 doshas are involved in manifestation of Yoni Vyapada, Vata Dosha plays an important role in pathogenesis of all 20 types of Yoni Vyapad.Snehana,Swedan,Basti Chikitsa is indicated for vitiation of vata in Yoni Vyapada,while for Pitta vitaition, Sheeta Guna Bahul Dravyasare indicated.Kapha Dosha Vitiation is cured with the help of Riksha and Ushna Guna Pradhana medication while treating Yoni Vyapada[13].

Guru, Mand, Abhishyandi Ahaar, Vishamashana, Adhyashana, Viruddhaahaar causes Sarvadiahik Kapha Vruddhi. Kaphaja Krumi is formed at the site of Yoni due to Sarvadehik Kapha Vruddhi and Kleda, which in turn produces Kandu (itching) and per vaginal Pichhila Strava (sticky discharge).

Prakruti Vighaat[14] is the treatment of Krimi where Kaphaghna Chikitsa is done in such a way that it will destroy krimi as well as restricts the production of Abhyantar Krimi.

The female genital organs come under the influence of Apan Vayu. Basti chikitsa is the treatment of choice of Vata dosha. Thus Krimighna Basti Upakrama is effective in management of Yoni Vyapada, especially in cancers of Tryawarta Yoni.

1. **Cancers of Tryawarta Yoni – Allopathic and Ayurvedic perspective of individual gynecological cancers in terms of types, causes, signs and symptoms, diagnostic tools, and treatment.**
   - **i. Common factors of Cancers of Tryawarta Yoni**
   - **A) Samprapti of cancers of Tryawarta Yoni -**

Cancers of Tryawarta Yoni include cervical, vaginal, uterine and ovarian cancers. Samprapti (pathogenesis) of any disease is defined as process of expression of diseases starting from Dosha Dushti, vitiation of Dhatu, Mala, Srotas, Avayava, Kala due to Dushta Dosha, site of Kha Vaigunya, till actual manifestation of disease. It is essential to understand Samprapti of disease for deciding line of treatment. Samprapti of cancers of Tryawarta Yoni can be tabulated in Figure 1.

ii) **Staging and Grading of Gynecological cancers[15] -**

From the perspective of modern medical science, cervical, vaginal, uterine and vaginal cancers are classified on the basis of stage and grade of the disease.

Stages of gynecological cancer –

The two systems used for staging of vaginal cancer -

1) FIGO (International Federation of Gynecology and obstetrics)
2) AJCC (American Joint Committee on Cancer, TNM grading system)

Key points for staging on the basis of TNM classification–

1) Extent of tumour / Size of tumour (T)
2) Spread nearby lymph nodes (N)
3) Spread (Metastasis) to distant site (M)

Depending upon TNM classification, staging of cancer is done from stage I/ IA to IVB. Staging at the time of initial diagnosis is useful for planning line of treatment i.e. surgery, chemotherapy or radiotherapy.

Grades of gynecological cancer[16]:

Tumor grade is the description of a tumor based on how abnormal the tumor cells and the tumor tissue look under a microscope. It is an indicator of how quickly a tumor is likely to grow and spread. If the cells of the tumor and the organization of the tumor's tissue are close to those of normal cells and tissue, the tumor is called "well-differentiated or Grade I". These tumors tend to grow and spread at a slower rate than tumors that are "undifferentiated" or "poorly differentiated or Grade III," which have abnormal-looking cells and may lack normal tissue structures. "Moderately-differentiated or Grade 2" tumors are those in which tumor cells don't look like normal cells and are growing more quickly than normal. Grading of cancer is mainly useful to assess prognosis of cancer.

ii) Organ specific information of cancers of Tryawarta Yoni

a. Cervical cancer and vaginal cancer

Cervical cancer ranks second most common cancer in India. Five years prevalence of all ages of female genital cancers for cervical cancer is 34.59 and of vaginal cancer is 1.75 as per India Globcon 2018.

Cervix termed as Yoni Mukha is a common site of cancer in females. Vagina termed as Yoni is also a site of cancer. Vitiation of Apana Vayu, Kapha Dosha, Rasa and Mansa Dhatu and Kleda are mainly responsible for manifestation of cervical as well as vaginal cancer. The external factors vitiating these bodily elements are improper dietary and life style habits, poor hygiene, absence of exercise, mental stress, excessive worry, sadness and anger; disproportionate and abnormal intercourse, worm manifestation and multiple pregnancies.

According to modern medicine the causes of cervical and vaginal cancers are infection with Human Papilloma Virus (HPV), infection with Chlamydia, diseases like AIDS which hamper immunity, multiple pregnancies, first pregnancy before the age of 18, smoking, obesity, family history of Cervical Cancer, extended use of hormones for birth control and neglected vaginal hygiene. Cervical Cancer occurs in three main categories viz. squamous cell carcinoma, adenocarcinoma and mixed cell tumour. About 80% to 90% tumors are of squamous cell type. There are 4 types of vaginal cancer namely squamous cell carcinoma, adenocarcinoma, clear cell adenocarcinoma and melanoma. In the initial stages cervical and vaginal cancers do not show any symptoms. When the disease is advanced, symptoms like bleeding between the two menstruation cycles, vaginal bleeding after menopause, excessive bleeding during menstruation, abnormal bleeding, bleeding after intercourse or after vaginal examination and pain in abdomen are seen. Diagnostic tools for these 2 types of malignancies are clinical examination, PAP smear, Colposcopy, Cervical biopsy, abdominal Sonography, CT scan and MRI of abdomen and pelvis and PET CT scan.

As per the modern medical science, cervical and vaginal cancers are treated surgically, with complete removal of uterus, teletherapy and brachytherapy (which means Radiotherapy given internally through vagina) and Chemotherapy.

Shamana chikitsa, Rasayana chikitsa and Panchakarma treatment are advocated for cervical as well as vaginal cancer patients, taking into consideration the contributing factors, such as: medicines which can normalize the function of Apana Vayu; those which can destroy vitiated Kapha and Kleda; those which stimulate the healthy production of Rasa, Rakta and Shukra

Dhatus and strengthening the Mansa Dhatu. Krimighna chikitsa in the form of Apakarshana (Shodhana), Prakruti Vighaat and Nidan Parivarjan is also a treatment of choice in cervical and vaginal cancers. Rasayanas like Shatavari, (*Asparagus racemosus*), Gokhshur (*Tribulus terrestris*), Anantamul (*Hemidesmus indicus*), Haridra (*Curcuma longa*), Neem (*Azadirachta indica*), Vidang (*Embelia ribes*), Chandraprabha Ras, Triphala Guggul, Vanga and Trivanga Bhasma are effective in management of cervical and vaginal cancers. Basti chikitsa which destroys Kleda and pacifies vitiated Vata dosha is also beneficial to prevent recurrence or metastasis. Yonidhavan (Cleansing of vagina) with Neem and Panchavalkala Kwath and or Yonipichu with Neem oil or Yashtimadhu Ghruta is recommended for maintaining local hygiene and healing ulcers in cervix and vagina.

Very often cervical and vaginal cancer patients suffer from immediate and long term side-effects of Radiotherapy such as: pain and burning sensation while passing the urine, presence of blood in the urine, burning sensation in vagina, bleeding through stools, fistula, diarrhea, ulcers in vagina and anus, pain in the lower abdomen, dryness of vagina and painful intercourse. Ayurvedic treatment consisting of Kamadudha Rasa, Praval, Sandal wood, Shadangodak, Coriander seeds, a decoction made from Truna-Pancha-Mul helps in pacifying Pitta dosha and purifying the urine. Yonipichu with medicated ghee like Yashtimadhu Ghruta is also useful. The diet of the patient should include virtuous food items such as cow's milk, ghee, butter; different types of porridges, red rice, cooked split green gram, fresh vegetables and fruits, fruit juice and Kokum Sarbat.

b. Uterine Cancer

5 years prevalence of uterine cancer in India is 5.17% as per India Globcon 2018.

Uterus is one of the organs of reproductive system endowed with the responsibility of holding the fetus in its sac like structure for 9 months, protecting it from infection and external factors, and providing nutrition to the growing fetus. Uterus is made up of three layers. The innermost layer is endometrium, the middle layer is composed of muscle tissue, and the outer layer is called serosa. 80% of uterine Cancers are Endometrial Cancers, and, depending on the cell type involved, are classified as adenocarcinoma, squamous cell carcinoma, adeno-squamous carcinoma and undifferentiated carcinoma. Cancers of the fibrous tissue from the mid layer, called sarcoma, are rare. These Cancers are further classified as Leiomyosarcoma and Stromal cell sarcoma.

Acharya Sushrut describes Uterus as a three layered organ, and compares it with Shankha (a conch shell). The innermost third layer in the formation of Shankha is termed as a 'bed for fetus'. According to Ayurveda menstruation is termed as Artava which is Upadhatu of Rasa dhatu. Dietary habits and lifestyle which causes vitiation of Rasa dhatu and invariably Artava, causing imbalance of Apan vayu, also heredity and destiny have been mentioned as risk factors for gynecological disorder. The contraindicated diet items are: those which are Guru i.e. difficult to digest like Shrikhanda, Pedhe, Barfi, almonds and cashews; cold fruits like banana, guava, custard apple and watermelon; fried food known to vitiate Rakta Dhatu like Farsan, Pakoda; green chili Chatni; spicy and pungent preparations; very bitter and astringent food items; peas, different types of beans (Peas, Chickpeas, Rajma), chick pea flour which are known to induce dryness and disturbs Apan Vayu. Frequent consumption of large quantities of such food, and psychological factors like excessive worry; addictions, over work which is known to disrupt the function of Rasa and Rakta Dhatu, keeping awake in the nights and taking naps in the daytime are the risk factors for the diseases of reproductive organs.

Modern medicine opines that the main reason for the occurrence of Uterine Cancer is the disturbance in the balance of the two hormones –Estrogen and Progesterone. Therefore during menopause period, around the age of 50 years, when the balance in the two hormones is very critical, there is more likelihood of getting Uterine Cancer. Medicines taken for birth control, for controlling the problems related to menopause and hormone treatment taken for breast Cancer for a prolonged period may cause Uterine Cancer. The additional causative factors for Uterine Cancer are: a history of Breast or Ovarian Cancer, Polycystic ovarian syndrome, family history of Colon Cancer not associated with polyposis, radiation given for any other type of Cancer in the abdomen, infertility, beginning of menstruation at an early age and delayed menopause, insufficient exercise, obesity and history of diabetes.

The symptoms of Uterine Cancer are: bleeding between the two cycles of menstruation, excessive bleeding for long periods, foul smelling per vaginal discharge, pain in lower abdomen, palpable lump in the abdomen and loss of weight. Uterine Cancer can metastasize in adjacent lymph glands, omentum, liver, lung, bone and brain. The diagnosis can be based on the basis of clinical examination, endometrial biopsy, D and C (dilatation and curating), per vaginal Sonography, CT scan, MRI and PET scan. A blood test called CA125 is useful to assess the extent of the disease, treatment outcome and indicates metastasis.

Conventional treatment for Uterine Cancer is Pan-hysterectomy, Radiotherapy, Chemotherapy and Hormonal therapy. Ayurveda treats the abnormal constituents in the body responsible for causing uterine Cancer, as follows: To purify the Rasa Dhatu – Shatavari; to detoxify Artava – Lotus (Nelumbo nucifera), Ananta (Hemidesmus indicus), Praval (corals) and Navayasloha; to strengthen Mansa Dhatu – Chandraprabha Vati; for increasing the activity of Apan Vayu – Gandharva Haritaki and Rasayana chikitsa with Kushmandavaleha; to rectify Vata Dosha – Basti Panchakarma and to purify Rasa Dhatu – Vaman amongst Panchakarma. In addition, Ayurveda has advocated habits such as regular exercise, positive thinking, proper diet, and rest during night, restricted sexual activity as important conditions for long life, which are also applicable for prevention of Cancer.

c. Ovarian cancer

Ovary is one of the important organs of female reproductive system where ova are generated. Every month one mature ovum is created. In Ayurvedic scripts it is mentioned that an ovum is generated once in two months (ऋतौभवं तदार्तवम्) and therefore is called 'Artava'. Artava is Upadhatu of Rasa Dhatu and therefore is an abode of Kapha Dosha. As per the sutra (' आर्तवं आग्नेयम्'), it is also a site of Rakta Dhatu and Pitta Dosha. All the further journey of the matured ovum through Fallopian tubes to the uterus, where it gets fertilized by the sperm and in absence of fertilization, to get rid of the ovum through vaginal discharge at the end of the month is under the control of Apan Vayu. Artava being Stree Beeja, it is also considered as Shukra Dhatu. Therefore, the architecture of ovary and its function depends on the Tri Dosha – Vata, Pitta and Kapha, Rasa-Rakta and Shukra Dhatu.

The modern medical science describes three types of tissues and cells in the ovary. They are: epithelial cells, which surround the ovum; germ cells, which produce the ova and stromal cells,

which protects and shapes the ovary. The abnormal multiplication and growth of these cells result in respective types of Cancer. Amongst these, the most common type of tumour is of epithelial type which contributes to 85% to 90% of ovarian cancer. Depending on the microscopic examination of the cells involved, they are mainly of two types viz, benign that is non-malignant and malignant type.

The occurrence of Stromal Cancers is more prevalent after the age of 40 years and the possibility is twice higher at the age of 60 and above. The contributing factors of ovarian cancer in diet are foods which are high in fat content, diet devoid of fresh fruits, vegetables, grains and lentils. According to modern medical science the other factors contributing to the cause of this Cancer are infertility, no breast feeding, non-pregnancy, non-lactation, overuse of estrogen treatment for conception or at menopause, a family history of ovarian, breast or rectal Cancer, mutational changes in BRACA 1/2 genes and habits like smoking. The causes of ovarian Cancer according to Ayurveda are, vitiation of Vata dosha especially Apana vayu because of excessive consumption of foods like sprouts, peas, chickpea, dry confectionaries like biscuits, breads, consuming very cold refrigerated water, ice-cream, excessive exercise, staying awake at night, over stress and anxiety. The other factors which vitiate Pitta Dosha and cause Rakta Dushti and increase heat in the body like excessive consumption of hot and spicy food, non-veg food, working in hot climate and having a short tempered nature are also responsible for ovarian Cancers. Foods like yoghurt, banana, cucumber when consumed more frequently and in large quantities, sleeping after lunch, sedentary life style, working in Air Condition, lack of exercise lead to vitiation of Kapha dosha, Rasa dhatu and Jatharagni. Hormonal treatments which interfere with the natural menstrual cycle and cause its disturbances lead to Shukra Dhatu Dushi causing Cancer.

Problems occurring during menstrual cycle or after menopause like post-menopausal bleeding, abdominal bloating and pain, loss of appetite, constipation, backache, weakness, weight loss, fatigue, and dyspareunia are some symptoms of ovarian Cancer. If the above signs and symptoms are observed, the diagnosis of ovarian cancer can be confirmed by investigating with the help of Transvaginal Sonography (TVS), CT scan, PET scan, laparoscopic biopsy, and ovarian cancer specific tumour marker CA 125. Allopathic treatment of ovarian Cancers mainly consists of Surgery –hysterectomy with oophorectomy, Chemotherapy, Radiotherapy, Hormonal treatment and Immunotherapy.

In spite of these treatment modalities, the possibility of recurrence of cancer or metastasis of cancer in abdominal organs, and thus ascites formation is very common in ovarian Cancer patients. Thus to increase their immunity which is hampered in the process of recurrent disease or metastasis, supportive Ayurvedic treatment is essential.

Ayurvedic herbal and herbo-mineral drugs like Shatavari (*Asparagus racemosus*), Guduchi (*Tinospora cordifolia*), Kushmanda Avaleha and Suvarna Malini Vasant increase the strength of Rasa and Shukra dhatu and reduce their vitiation. Drugs which alleviate Pitta dosha and have a cooling effect like, Anantamul (*Hemidesmus indicus*), Kamal (*Nelumbo nucifera*), Mouktik Bhasma, and Praval Bhasma are very useful. At the same time medicines like Eranda mool- castor, Hingvastak Choorna which causes Anulomana of Vata dosha are beneficial in controlling ovarian Cancer. Medicines like Chandraprabha Vati, Kumari Asava and Pippalyasav play a vital role in improving the function and structure of ovaries. Depending on the strength of the patient and under the guidance of Ayurvedic physician, Panchakarma procedures like Basti is very useful in preventing recurrence of ovarian Cancer. A well balanced diet comprising of six rasa, which is not very hot or spicy, nutritious and healthy is very essential. At the same time regular exercising, mental relaxation achieved by Pranayam and Yogasana are important in preventing occurrence and recurrence of ovarian Cancer.

Complications and prognosis of cancers of Tryawarta Yoni:

Metastasis in adjacent pelvic organs like bladder, rectum, pelvic bones, abdominal and pelvic lymph nodes; in distal organs like liver and lung or recurrence at same site are the common complications of cancers of Tryawarta Yoni. These cancers are generally Kruchha Sadhya i.e. difficult to treat due to their natural tendency to recur or metastasize. Adjunct Ayurvedic treatment helps to detoxify genital organs, enhance immune system, interrupt Samprapti and thus confine growth of tumour.

CONCLUSION

Cancers of Tryawarta Yoni mainly include cervical, vaginal, uterine and ovarian cancers. These cancers are broadly correlated with Yonivyapad mentioned in Charak Samhita. Mithya Ahaar, Mithya Vihar, Mithya Achar, Pradushta Artava, Beeja Dosha and Daiva are quoted as causative factors of Yonivyapad. Vata dominant Tridosha Dushti, Rasa – Rakta – Mansa – Shukra Dhatu Dushti – Kleda Nirmiti – Krimi are the important factors in Samprapti of cancers of Tryawarta Yoni. Adjunct Ayurvedic treatment in the form of Shamana chikitsa, Panchakarma, Pathykar Aahar, Pathyakar Vihar, selected Shashti Upakrama are beneficial in management of cancers of Tryawarta Yoni.

References

1. *Cancer.india,org Globocon India2018*
2. *Yaska's Nirukt, Volume 1,Edited by V.K.Rajawade,1940,Published by Government Oriental Series ,class A,No.7;NI.XIV.Sec.16-20,*
3. *Sushrut Samhita with commentary Ayurved Tutwadeepika by Kaviraj Ambikadatta Shastri, Choukhamba Sanskriti Bhavan Varanasi (2005).Sharir Sthana 5/55-56 pp.49*
4. *Sushrut Samhita with commentary Ayurved Tutwadeepika by Kaviraj Ambikadatta Shastri, Choukhamba Sanskriti Bhavan Varanasi (2005).Sharir Sthana 5/51 pp.48*
5. *Kashyap Samhita or Vruddhajeevakeeya Tantra with Hindi Vidyotini commentary ,Choukhamba Sanskrit Sansthan, Seventh edition,2000;Krimimchikitsa Adhyay pp 134-196*
6. *Sushrut Samhita with commentary Ayurved Tutwadeepika by Kaviraj Ambikadatta Shastri, Choukhamba Sanskriti Bhavan Varanasi (2005).Sharir Sthana 5/8 pp.42*
7. *Sushrut Samhita with commentary Ayurved Tutwadeepika by Kaviraj Ambikadatta Shastri, Choukhamba Sanskriti Bhavan Varanasi (2005).Sharir Sthana 5/8 pp.42*
8. *Bhavaprakasha Purva Khanda Adhyaya 16/3*
9. *Sushrut Samhita with commentary Ayurved Tutwadeepika by Kaviraj Ambikadatta Shastri, Choukhamba Sanskriti Bhavan Varanasi (2005).Sharir Sthana 5/19 pp.44*
10. *Sushrut Samhita with commentary Ayurved Tutwadeepika by Kaviraj Ambikadatta Shastri, Choukhamba Sanskriti Bhavan Varanasi (2005).Nidan Sthana 3/18-19*
11. *Charak Samhita vol.1,Chakrapaani Teeka, Prof.R.H.Singh, Choukhamba Surbharati Prakashana,Varanasi (2013),Chikitsasthan 30/9-35 pp.635-636*

12. *Charak Samhita vol.1,Chakrapaani Teeka, Prof.R.H.Singh, Choukhamba Surbharati Prakashana,Varanasi (2013),Chikitsasthan 30/9-35 pp.635-636*
13. *Charak Samhita vol.1,Chakrapaani Teeka, Prof.R.H.Singh, Choukhamba Surbharati Prakashana,Varanasi (2013),Chikitsasthan 30/9-35 pp.635-636*
14. *Charak Samhita vol.1,Chakrapaani Teeka, Prof.R.H.Singh, Choukhamba Surbharati Prakashana,Varanasi (2013),Vimana Sthana 7/14 pp.258*
15. *American cancer society; cancer.org/cancer/vaginal cancer/detection-diagnosing/staging/signs and symptoms*
16. *American Cancer Society Last Medical Review: November 16, 2016, Last Revised: December5,2016www.cancer.org/cancers/endometrial-cancer/treatng/by-stage Last Medical Review: March 27, 2019 last Revised: March 27, 2016*