Case Study

AYURVEDA AS A CO-THERAPY IN THE MANAGEMENT OF OLIGOASTROCYTOMA: A CASE STUDY

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ABSTRACT

Anaplastic astrocytoma (AA) is a diffusely infiltrating malignant, astrocytic, primary brain tumour with a peak incidence between 40 to 50 years of age is a leading cause of cancer death. Though cancer chemotherapy is highly effective in many cancers, but side-effects of chemotherapy are severe in many patients like myelosuppression, anorexia, weight loss, mucositis, fatigue, nausea, vomiting and diarrhea. It appears that side effects of chemotherapy are manifestations of aggravated Tridosha as Raktadushti (vitiated blood). Therefore, present case study was undertaken to find effectiveness of Ayurvedic medication as an adjuvant or co-therapy in the management of oligoastrocytoma as well as in minimizing the side effect of chemo-radiotherapy. A female patient of age 40 years with brain cancer (clinically diagnosed case of anaplastic oligoastrocytoma grade 3rd) undergoing oral chemotherapy by irnocam 150 mg, avastin 400mg for 6 cycle and radiotherapy was taken. Patient was given classical Ayurvedic formulation of Rasa sindur 50mg+ Abhrakkhasma 250mg+ Vachachurna 500mg+ Panchamritalauha guggulu 250mg BD with honey, Shatavarighrita 5gm BD with milk, Jyotishmatitaila 5 drops BD with Bataasha and cap SNEC30 (liquid curcumin capsules). After the completion of 6th cycle there were very encouraging results observed with negligible side effects, improvement in all chief complaints, general health condition and quality of life of the patient. Ayurvedic medication appears to have significant effect on reducing side effect of chemo-radiotherapy and improving quality of life in the patient of brain cancer (oligoastrocytoma).

KEYWORDS: Oligoastrocytoma, Tridoshas, Raktadushti, Chemo-Radiotherapy, Quality of life, Rasa sindur, Abhrakkhasma, Vachachurna, Panchamritalauha guggulu, Shatavarighrita, Jyotishmatitaila.

INTRODUCTION

Anaplastic astrocytoma (AA) is a diffusely infiltrating, malignant, astrocytic, primary brain tumour with a median age of onset of 40 to 50 years. AA constitutes 4% of all malignant CNS tumours and 10% of all gliomas[4]. The survival of patients with AA varies depending upon molecular pathology. With conventional treatment, median overall survival (MOS) and 5 year survival rates are 3 years and 28%, respectively. Whereas very few children are diagnosed with Oligoastrocytoma. In modern medicine[2] chemotherapy and radiotherapy is the main treatment modalities of cancer treatment. A considerable number of patients have to go through distressing treatments like chemotherapy and radiotherapy. Chemotherapy and radiotherapy are considered an effective way to help cancer survivors but chemotherapy drugs are highly toxic and produce myelosuppression and some serious side effects like constipation etc[3]. Whereas radiation therapy though administered locally, can produce systemic side effects such as fatigue, anorexia, nausea, vomiting, alteration in the taste, sleep disturbance, headache, anaemia, dry skin, constipation etc.[4] These arrays of side effects have a devastating effect on the quality of life of cancer survivors. As modern science and medical advancement provide the rationale for the integration of various Alternative and Complementary Medicine to promote healing, health and longevity, present case study was undertaken to find effectiveness of Ayurvedic medication as a adjuvant or co-therapy in the management of oligoastrocytoma as well as in minimizing the side effect of chemo-radiotherapy[5].
Case Report

The present case study is a successful Ayurvedic management as a co-therapy in a case of anaplastic oligoastrocytoma. A 40-year-old Hindu female patient having history of anaplastic oligoastrocytoma since 6 years presented with complaints of weakness in right upper limb, difficulty in speaking, decreased appetite, weight loss, anaemia and fatigue. Her MRI brain revealed that she was a known case of anaplastic oligoastrocytoma grade III, in postoperative status, she was advised radiotherapy and chemotherapy by her oncologist. She had completed her radiotherapy cycle of 52 days (from 19-11-2018 to 09-01-2019). Then she was advised for chemotherapy (6 cycles from 24-02-2019 to 03-06-2019). But patient was not willing to take chemotherapy due to fear of side-effects such alopecia, severe nausea, vomiting, lack of appetite and fatigue. Post-radiotherapy the patient reported to National Institute of Ayurveda, Jaipur for Ayurvedic medication on 27/02/2019. This is a single case study and consent was taken from the patient and study was in accordance with ICH-GCP guidelines.

Table 1: Showing complaints of patient

| Sr.no | Chief complaints              | duration |
|-------|------------------------------|----------|
| 1     | Weakness in right upper limb | 15 days  |
| 2     | Difficulty in speech         | 15 days  |
| 3     | Generalised weakness         | 6 month  |
| 4     | anorexia                     | 4 month  |
| 5     | Weight loss                  | 4 month  |

Associated complaints: none
Past history – K/c/o-oligoastrocytoma operated in October 2018

Table 2: Showing medication taken by patient (chemotherapy drugs for 6 cycles from 24-02-2019 to 03-06-2019)

| S.no | Name of medicine | Dosage/frequency |
|------|------------------|------------------|
| 1    | Irnacam          | 150mg            |
| 2    | Avastin          | 400mg            |
| 3    | Neukine          | 300mcg           |

Table 3: Personal history

|          |                |
|----------|----------------|
| Appetite | good           |
| Sleep    | disturbed      |
| Micturition | 4-5 times a day |
| Bowl     | Twice a day    |
| Addiction | Tea 2 times a day |

On physical examination
Weight - 60kg
Height - 160cm
BMI - 23.4 kg/m2
Blood pressure - Lying right arm 140/90mmHg
Sitting right arm 130/90mmHg
Pulse- 82bpm, regular; Respirations 20/min
Thyroid: non palpable
Lungs: clear to auscultation
Heart: Rate and rhythm regular, no murmurs or gallops
Vascular assessment: no carotid bruits, femoral popliteal and dorsalis pedis pulses2+ bilaterally
Neurological assessment: Diminished power and motor activity in right upper and lower limb

Astdividhapariksha

| Nadi       | Kaphaja, Guru nadi |
|------------|---------------------|
| Mala       | Saama, Shushkamala, Alpapravritti |
| Mutra      | Samyakpravritti    |
| Jihwa      | Shwetaliptata       |
| Sparsha    | Snigdha            |
| Shabda     | Gambheer           |
| Drik       | Prakrat            |
| Akriti     | Samanya            |

General Examination
Consciousness – Conscious
General appearance – Normal
Built – Moderate
Pallor – present
Icterus – Absent
Cyanosis- Absent
Clubbing – Absent
Oedema – Absent
Lymphadenopathy – Absent
Gait – Normal
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Table 4: Therapeutic intervention

| S.no          | Contents                                                                 |
|--------------|--------------------------------------------------------------------------|
| 1.           | Rasa Sindure Parad and Gandhaka                                          |
| 2.           | Abhraka Bhasm Purified Abhraka                                            |
| Vach Churna   | Vacha                                                                    |
| Panchamrita Lauha Guggulu | Shuddhaparad, Shuddhagandhaka, Raupyabhasma, Abhrakabhasma, Swarnamakshikbhasma, Lauhabhasma, Shudhaguggulu |
| Cap. Snec 30  | Liquid Curcumin (Arbro pharmaceutical product)                            |
| Jyotishmati Taila | Tilataila processed with Jyotishmati                                    |
| Shatavari Ghrita | Shatavari, Goghrita                                                       |

Table 5: Follow-up and outcomes

| Subjective finding (chief complaints)       | B.T | A.T       |
|--------------------------------------------|-----|-----------|
| Weakness in right upper limb               | Present | Mild present |
| Difficulty in speech                       | Present | Mild present |
| Generalised weakness                       | Present | Absent    |
| Anorexia                                   | Present | Absent    |
| Weight loss                                | Present | Absent    |

Subjective findings (chemotherapy side effect)

| Nausea & vomiting                          | Present | Absent    |
| Fatigue                                    | Present | Mild present |
| Alopecia                                   | Absent  | Absent    |
| Xerostomia                                 | Present | Absent    |
| Tastelessness                              | Present | Absent    |
| Weight loss                                | Present | Absent    |

Assessment criteria

Table 6: QQL in Oligoastrocytoma (Brain Cancer)[6]

| QOL Parameters       | 27/02/2019 | 14/03/2019 | 29/03/2019 | 13/04/2019 |
|----------------------|-----------|-----------|-----------|-----------|
| physical Well-being  | 20/28     | 15/28     | 13/28     | 10/28     |
| Social/Family Well-Being | 19/28   | 17/28     | 15/28     | 15/28     |
| Emotional Well-Being | 19/28     | 17/28     | 15/28     | 12/28     |
| Functional* Well-Being | 4/28    | 7/28      | 11/28     | 11/28     |
| Additional Concerns | 54/92     | 45/92     | 40/92     | 40/92     |
|                     | 116/204   | 101/204   | 94/204    | 88/204    |

Assessment of the effect of therapy on quality of life was carried out on the basis of FACIT Questionnaires (Functional Assessment of Chronic Illness Therapy or Cancer Therapy (FACT)). The general cancer specific questionnaire consists of five domains:

- Physical
- Social/Family
- Emotional
- Functional Well-Being
- Additional Concerns
In the above table deceasing score is showing improvement in the physical, social/family, emotional well-being along with additional concerns while increasing score showing improvement in functional well-being in the patient with the treatment.

**DISCUSSION**

Chemotherapy medicines produce side-effects like diarrhoea, loss of appetite, weakness, vomiting, constipation, fever, stomatitis, burning sensation, weight loss, alopecia, myelosupression and affects the quality life of patients. Through Ayurvedic perspective, it appears that side effects of chemotherapy are the manifestations of aggravated *Tridosha* under the group of disorders as *Raktadushti* and as mentioned in Ayurveda classics.\(^7\) *Shoola* is the sign of aggravated *Vata dosha*, *Daha* (burning sensation), *Mukhapaka* (stomatitis), *Payupaka* (urethritis), *Gudapaka* (proctitis) etc. are the sign and symptoms of aggravated *Pitta dosha*, *Aruchi*, *Chhardi*, *Vibadh* etc., are the sign of aggravated *Kaphadosha*. Chemotherapy drugs also vitiates *Jatharagni* causes *Annavastra* *Srotodushti* *Lakshana* viz., *Aruchi, Anannabhilashanam, Chhardi* etc. The principle behind selection of these drugs and *Tridosh-shamaka* regimen was to restore and support functioning of gastro-intestinal system, reducing pain and promotes strength to patient.

| Formulations          | Karma (Pharmacological Effect)                                                                                                                                                                                                 |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| **Abhrakabhasma**     | Ushnavirya, Balya-rasayan effect, Ojovardhak, Tridosh-shamak, Raktavardhak, Yogvahi, Agnivardhaka                                                                                                                                 |
| **Ras sindur**        | • Ushnavirya, Balya, Rasayan, Rakta-shodhaka<br>• Behave as a Protease inhibitor by inhibiting the proteolysis of BSA by trypsin proves its anticancer activity.\(^8\)<br>• This Ayurvedic drug also shows antioxidant property |
| **Vachachurna**       | Ayurvedic properties- *Ushnavirya, Katutikta rasa*, *Vacha* has a special potency (Prabhava) as a nerve tonic (Medhya), *Vacha* is *Agnivardhaka, Mala-Mutravishodhaka, Lekhana*<br>Chemical constituents<br>1. The ethanolic extract of *Acorus calamus* has anti-proliferative and immunosuppressive properties. This extract causes the tumour necrosis which inhibits the proliferation of mitogen, antigen stimulated peripheral blood mononuclear cells in humans, nitric oxide and interleukins\(^9\)<br>2. Anticancer activity of *Acorus calamus* rhizomes was evaluated, hydroalcoholic extract of *Acorus calamus* rhizome showed anti-proliferative activity on anticancer cell.\(^10\)<br>3. Methanolic extract of *Acorus calamus* showed analgesic and anti-inflammatory effect. |
| **Panchamrit Lauha Gugullu** | Act as antiseptic, anti-bacterial, astringent, anti-spasmodic, anti-inflammatory agent. *Abhrakbhasma* which is one of the ingredients is known for treatment of various chronic diseases. *Roupyabhasma* known for its *Vatashamak* property acting on kidney, brain and nerves has analgesic activity and useful in many condition like pain, neuralgias, inflammation, anxiety, convulsion.<br>Memory loss etc.<br>*Swarnamakshik Bhasma* is indicated in the effective management of *Mandagni Anidra, Apasmara, Pandu* etc.<br>*Loha Bhasma* is useful in treatment of various conditions like *Pandu* (anaemia), *Shotha* (oedema).<br>So *Panchamrit Lauha Guggulu* has analgesic and anti-inflammatory properties. It improves blood circulation to the brain and act on brain, nerves, blood vessels, heart muscles, bones and joints. It is commonly used in the treatment of mental disorders, symptoms associated with nerve weakness, neuralgia, neuritis etc. |

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