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Survival Benefit in a Patient with Advanced Poorly Differentiated Adenocarcinoma of Lungs with Extensive Bone Metastasis with Ayurvedic Rasayan Therapy-A Case Report

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Abstract:

This case review focuses on the clinical experience with Herbo-mineral Ayurvedic formulation in a patient with stage-IV carcinoma of lungs with extensive bone metastasis and discusses the clinical potential of Rasayana therapy for use in combination with Chemotherapy. There remains an unmet need for effective, well tolerated treatment options in advanced lung cancer to alleviate the disease burden in the cancer population.

We are presenting a case of 65 years old Lung cancer patient in advanced stage with extensive bone metastasis. In this case Rasayana therapy demonstrates survival

benefit of more than 30 months with improvement in quality of life against median survival rate of 6 months in such cases.

Key Words: - Bone metastasis, Rasayana therapy, Ayurveda, Lung cancer

Introduction:

Extensive bone metastasis often leads to poor prognosis in lung cancer patients. In majority of advanced lung patients with extensive bone metastasis often suffered from skeletal related events like spinal cord compression, fracture of the bones ,surgery to bone, etc.^(1, 2)This may further impact on their quality of life and also increases mortality rate. The prognosis of patients with metastatic lung cancer to bones is very short i.e.around 6 months.⁽²⁾Statistical studies revealed expected one year survival rate in bone metastasis patient is only 12.1 % and in patients with skeletal morbidities is only 5.1 %.⁽¹⁾

In this case after failure of first line chemotherapy we treated patient with primary objective to extend life span with better quality of life. Our aim was to give skeletal morbidity free life to patients. During 30 months of observation patient was ambulatory, didn't have any complications related to bone metastasis. His pain also was under control.

Rasayana therapy can be helped in management of cancer in many ways. There are various Rasayana formulations available in Ayurvedic classical text books. Rasayana preparations can act as an adjuvant or a co-therapy along with Chemotherapy or Radiotherapy.It can be helpful in targeted therapies as shown in various studies on nanoparticles of gold.⁽⁴⁾

Various clinical studies have proved the beneficial role of Rasayana therapy for Cancer .It involves transformation, dysregulation of apoptosis, proliferation, invasion, angiogenesis and metastasis. ^(4, 5)Rasayana compounds are rich in anti-oxidents and have immunomodulatory, anti tumourogenesis, anti-inflammatory, anti angiogenic properties. ^(4, 5)A research study shows its efficacy in genome studies, and in stem cell therapy. (4)

In this case on the basis of pathology of lung cancer we selected herbo-mineral Rasayana compounds which act on respiratory system with bones and skeletal system with other symptomatic Ayurvedic formulations.

Case Presentation:

A 65 years old male patient of adenocarcinoma of the lung with extensive skeletal and bone metastasis patient first diagnosed on 28/6/2010, came to Rasayu cancer clinic on 8/7/10 with complaining of backache, couldn't stand for long time due to pain in both lower limbs, severe pain in both hip joints. He was also complaining of cough with expectoration, shortness in breath for a month. He had been on Chemotherapy and Radiotherapy. His left femur CT guided biopsy dated 29/6/2010 revealed metastasis of poorly differentiated carcinoma and immunochemistry of tumor cells were positive for CK 7 and CEA and immunonegative for TTF and chromogranin and synaptophysin which revealed primary adenocarcinoma of lungs. After detailed physical examination and laboratory findings we had started Ayurvedic Rasayana therapy on the basis of Ayurvedic parameters. Three months later in his PET scan found to have osteolytic lesions involving the C7, 03, 04, 05, 07, 08, 09, 011 and 12 Vertebral bodies as well as the spinous process of C6, 06 and 07 vertebrae. The transverse process of the 04 and 08 vertebral bodies also show osteolysis. All of these lesions show uptake of FDG (SUVmax: upto 9.9). Similar such osteolytic lesions were seen involving the left scapula, right 9th rib posteriorly, sacrum, both iliac bones, with uptake of FDG (SUVmax: upto 5.6). Small pre and paratracheal and right hilar lymph nodes were detected with mild uptake of FDG (SUVmax: upto 2.7). with lesions in lungs -2.5X 1.4 cms was seen in the anterior basal segment of the lower lobe of the right lung showing speculated margins and uptake of FDG (SUV Max-2.6).

Comparative to CT scan dated 7/7/2010 there was marginal reduction of lung lesions and comparison with previous study MRI of Spine dated 23/6/2010 showed no significant change in number and extent of vertebral lesions. Hence, we planned to continue Rasayana therapy further. In January 2011, his chemotherapy cycles were completed. After that CT- scan (10/1/2011) revealed speculated mass lesion noted in

anterolateral segment of right lobe with multiple skeletal Mets. It showed failure of his first line chemotherapy. Hence, we further continued Rasayana therapy. Later the patient was exclusively on Rasayana therapy. After one year repeated PET scan dated 29/2/12 revealed an irregular lesion was seen in the anterior basal segment of the lower lobe of the right lung showing only subtle metabolic activity. This lesion appears unchanged in size and morphology since the previous CT study dated 10/01/2011. Extensive metabolically active skeletal lesions are seen, few of which appear osteosclerotic whereas others appear osteolytic on the corresponding CT images. The lower dorsal and lumbar vertebral lesions appear unchanged since the CT study of 01/04/2011. However, some of the bone

Lesions appear new since the earlier whole body Positron Emission Tomography (PET/CT) study dated 30/09/2010. Mild Pericardial effusion was seen. Details of lesions which was seen on PET scan dated 29/2/12 was as follows -An irregular lesion, measuring approximately 3.1 x 1.3 cm in maximum transverse dimensions is seen in the anterior basal segment of the lower lobe of the right lung Showing very subtle uptake of FOG (SUVmax: 1.3). Small pre and paratracheal lymph Nodes are seen in the mediastinum showing mild uptake of FOG (SUVmax: 2.9). Small left axillary, left supraclavicular and right level IV neck nodes are seen with uptake of FOG (SUVmax: 7.6). Sclerotic lesions are seen involving the C7, 03, 04, 07, 08, 011, 12 vertebral bodies with uptake of FOG (SUVmax: 18.4). Some of these vertebrae appear compressed. Uptake of FDG (SUVmax: 17.3) is also seen involving the left C2/3 facet joint, C6, 03, 04, 06, 07 and 08 posterior elements. Some of these lesions appear sclerotic whereas others appear osteolytic. The transverse process of 03 vertebra on either side as well as the adjacent 3rd ribs appear involved as well with associated soft tissue. Focal areas of uptake of FOG are also seen in the sternum, left scapula, pelvic bones on either side as well as the sacrum with uptake of FOG (SUVmax: 15.7). An osteophyte is seen arising from the greater Trochanter of the left femur with uptake of FOG (SUVmax: 6.1). Hence, patients decided to continue therapy for quality of life and symptomatic relief. He was continued further Rasayana therapy for 10 months further. After that patient was not given follow up

so further status of patient was unknown. But in these 2 years and 3 months follow up period, the patient was ambulatory. His quality of life was good. At this advanced stage he could stay comparatively active. We treated this patient with Rasayana compounds which act on respiratory system and skeleton system.

Based on Ayurvedic principles novel Rasayana therapy with adjuvant symptomatic therapy was started on 8/7/2010 to restore and support functioning of respiratory system and various bones. It mainly includes Navjeevan Rasayana (Swarna Bhasma – Bhasma (Calx) of Gold, Hirakbhasma-calcinoid diamond, Abhrak Bhasma, - calcined Mica ash, Rajat Bhasma-silver ash, Tamra Bhasma-copper ash, Prawal Bhasma (Coral Calyx), Powder of Pippali, -Piper Longum, Yashtimadhu, -Glycerrhiza Glabra, Karkatshrungi-Pistacia integerrima, ringani-Solanum Surratense), with supportive Ayurvedic therapy includes Ayurvedic formulations like Tribhuvankirti rasa, Shwaskuthar Ras, Sitopaladi Churna, Tankan Bhasma, Vatgajankush Ras, Gokshuradi Guggul, Mahyograj guggul. with Agni Rasayana, Mahalaxmi Rasayan, Chaitnya rasayana and Sindurbhushan Rasayana.

Patient started treatment with above medications on 8/7 /10. After starting treatment his cough with expectoration and short breathing gradually reduced. Within 4 weeks of treatment the patient's appetite became normal and he retained his physical fitness. Therefore he tolerated chemotherapy well. His pain in both lower limbs and backache was also under control. He was ambulatory. His general condition was improved well after three months of Rasayana. He was having progressive difficulty ambulating due to the pain in the both hip joints which was reduced in three months of Rasayana treatment.

During our treatment period (8/7/2010 to 27/9/12) patient's general health was quite good. He was ambulatory without any complications like bone fractures.

Discussion:

Despite the use of chemotherapy as a single agent or combination regimens in the advanced adenocarcinoma of lungs, the results remain unsatisfactory. ⁽⁶⁾Hence, considering need of treatment we have started using Rasayana therapy in cancer patients successfully since many years. In advanced lung cancer with extensive bone

metastasis cases pain, fatigue, psychological distress, social problems, morbidity due to bone fractures, skeletal related events like pathological fractures spinal cord compression, hypercalcemia, skeletal related pain had the greatest impact on quality of life. ⁽³⁾ Hence, palliation and improving life span with quality was our first aim in management of this patient. The selected Ayurvedic compounds were planned so as to support and restore the normal functions of the Respiratory system, skeleton system and bones to relieve patient's symptoms and to improve quality of life.

In present case *Rasayana therapy was started* an Ayurvedic herbo-mineral preparation — as adjuvant to allopathic chemotherapy and radiotherapy was selected on the basis of patient's cancer stage, signs and symptoms. Main ingredients of Navjeevan Rasayana –Swarnbhasma proved as anti cancer in various types of cancers like rectal, lung, liver etc. ⁽⁵⁾ Bone is a common site of metastasis in lung cancer patients. Approximately 30–40% of Patients with advanced lung cancer exhibits bone metastases during the course of their disease, leading to a substantially negative effects on both morbidity and survival. ⁽³⁾ Despite advances in therapy the survival is expected to be just around 6 months. ⁽¹⁾ Considering the limitations of available therapies in advanced stage, it is important that the therapeutic strategies should be explored to prevent disease progression and development of bone metastases along with prolonging life and in improving quality of life. ⁽⁶⁾

The findings in this patient are encouraging which points towards the possible use of herbo-mineral *Ayurvedic Rasayana* therapy in management of advanced stage lung cancer with bone metastasis. In 2 & 1/2 years our patient hadn't any bone related fractures & morbidity. However further clinical trials are warranted to make further recommendations about use of these therapies in lung cancer patients.

It is strongly felt that the use of Rasayana therapy in combination with Chemotherapy and Radiotherapy as a treatment option for advanced metastatic adenocarcinoma of lungs offers much needed improvements in overall survival for this patient.

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