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A Multi Centric Clinical Management of Post Covid Syndrome through Ayurveda: A Retrospective Cohort Case Series

Dr. Shweta 1 * Dr. Manish 1 , Dr. Jyoti 1 , Dr. Nadeem 2 , Dr. Jaya 2 , Dr. Deepika 2

Government Ayurveda College, Choukaghat, Varanasi and SLBSS Ayurvedic college, Handia, Prayagraj.

*Corresponding Author: Dr Shweta Mishra, Lecturer, Government Ayurveda College, Choukaghat, Varanasi, India, 221002. Email id: drshwetamishraaiia@gmail.com

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ABSTRACT: Covid 19 is a disease caused by SARS- CoV-2 virus, which is a pathogen responsible for the corona virus disease 2019 as a pandemic. It has resulted in global health care crisis and strained health resources. Till date we have observed that Covid-19 is a multi-organ disease with a broad spectrum of manifestation. At the beginning of pandemic, we were mostly focusing on clinical presentation of patients in the acute, inpatient setting. But recent data suggests that some patient continue to experience symptoms related to Covid-19 after the acute phase of infection i.e. beyond 4 weeks from the onset of symptoms. These conditions are termed as Long Covid, Post Covid syndrome or Long haulers. It is hypothesised that people with weaker immune response may land up into these conditions. So, a holistic approach is required to follow up care and well-being of all post Covid recovering patient. Owing to this consideration the study was performed in 100 patients of post covid syndrome through Ayurvedic medicine. It was observed that there was significant improvement in all subjective as well as objective parameters of long Covid. This Paper describes about the same in detail.

KEYWORDS
Covid 19, SARS- CoV-2, Post Covid syndrome, Long haulers.

I. INTRODUCTION

We are facing the deteriorating impact of COVID -19 pandemic on body and mind. There are few hypotheses that have been proposed which could be contributing to prolongation of post covid symptoms. Some people's immune response may respond more strongly than other while weaker immune response in covid 19 might lead to symptoms lasting from several weeks to several months. weaker immune response can be caused by advanced age, pre-existing health condition and patients on immune-modulatory drug. On the other hand, some patient's immune response is so strong that their immune system become so aggressive for fighting against covid 19. As a result, make a cellular damage to other organ leading to acute respiratory distress syndrome and systemic inflammatory response syndrome. So, cause of continued symptoms beyond the acute phase of illness are due to weak immune response or aggressive immune response. Such long lasting symptoms after acute phase of illness are called as chronic covid symptoms, post covid symptoms or long term covid symptoms and these patients are termed as long haulers.

British National Institute for health and care excellence (Aka NICE) has categorised 3 stages of covid 19 recovery-

Acute covid 19 stage - within 4 weeks after diagnosis.

Ongoing covid 19 stage - lasts 4-12 weeks after diagnosis.

Long covid 19 stage - over 12 weeks after diagnosis.

It has been observed that most common symptoms that persists after covid 19 infection is fatigue(10 weeks after initial diagnosis). Other symptoms include cough (4-8 weeks after initial diagnosis), chest pain, breathlessness and some neurological issues (3 months after initial diagnosis) like headache, numbness, tremors, cognitive impairment, loss of taste, smell etc. So, it's a challenge to find regime that meets all challenges. During the emergency OPD sessions in government PG ayurvedic college and hospital, Varanasi and government Ayurveda college and hospital, Handia, it was observed that many

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patients who were either covid positive or post covid showed breathlessness, dry cough, weakness, headache, loss of appetite, nausea, increased liver markers as their common symptoms even after getting negative report of covid. It is well understood that the symptoms like increased liver markers, loss of appetite, nausea these all indicates towards increased pitta because of so many medications that aim at vata-kaphahara plan. This shows that at some point during the infection all three doshas are equally contributing towards the severity of covid infection. So, for better treatment plan it has to be assured to find out such regime that works on all three doshas combating the situation. Also, the drugs should be easily available for home delivery in the lockdown sessions. In the proposed study 100 patients of post covid symptoms were selected to see the efficacy of therapeutic interventions in Post Covid illness.

PROPOSED SAMPRAPTI

The COVID-19 virus is a type of RNA virus i.e. severe acute respiratory syndrome corona virus (SARS- CoV-2) belonging to the family Coronaviridae. The crowned like spike protein are present on its surface. Since it's a RNA based virus so they constantly change through mutation, and new varients of virus occur over time[1]. symptoms of corona virus include fever, cough, sore throat, loss of taste and smell, fatigue, dizziness, unexplained weakness along with some neurological problem, Pneumonia, ARDS and even death can occur[2].The post covid infection symptoms indicate the vitiation of dosha which can be understood. since it's a pranavaha sroto dushti vyadhi, and the moola sthana of pranavah is hridaya (thoracic cavity), mahasrotas (gastrointestinal region)[3].so it's very clear that we have two ways of dushti,i.e.

The covid infection itself – the virus has its affinity towards pranavaha srotasa which is the seat of prana vayu, udana vayu which facilitates the breathing process, sadhaka pitta which supports cell biological functions and avalambaaka kapha which protects and maintain the organs[4].The chikitsa of pranavaha sroto dushti is swash chikitsa which is vata kapha hara.

The medicines taken: the ushna aushadis taken goes through amashaya[4] which is the sthana of pitta and kledaka kapha[5]. The Shwasa Vyadhi is Pittasthana Samudbhava (originating from seat of Pitta). The kledaka kapha has influence over kapha sthana being one of them[6]. thus, playing an important role in pathology of pranavaha sroto vyadhi. the medicines used are vata kapha hara which means it increases pitta so pitta dushti is also observed in post covid patients giving raised liver markers.

These two different ways (covid itself and ushna aushadis) creates a havoc in tridoshas leading to symptoms like breathlessness, dry cough, weakness, headache, loss of appetite, nausea, increased liver markers. Since Mahasrotasa (alimentary canal) is Mulasthana for Pranavaha Srotasa, any disturbance in Gastrointestinal system will affect Pranavaha srotasa. Amashaya is the common seat of Kapha and Pitta Dosha. Therefore, Dushti of Sthana (abode) leads to Pitta Dushti.

MEDICINES TAKEN

Keeping the above points in focus the combination of kalmegh 2gm, guduchi 1gm, shunti 500mg with honey twice day empty stomach was given along with amlapittamishran 10ml b.d, amastha avaleha 10gm twice a day, kas shwas hari rasa tablet 1 tab bd. All these medicines were standard and were easily available for home delivery and local market.Kas shwas hari tablet contains shwasa kasa Chintamani, laxmivilas nardiya ras, sutshekhar rasa, talishadi churna which balances kapha and reduces vata dosha. It cures cough and cold related rasa in ghana form.

OBJECTIVES OF STUDY

1. To study and understand the symptomatology of post covid infection
2. To evaluate the effect of Ayurvedic medicine in the management of post covid symptoms.

Materials and method

It was a single group observational study. Total 100 patients were taken from emergency OPD of RAC Varanasi and from Ayurvedic college Handia, Prayagraj. Patients were in the age group of 20 to 50 years irrespective of sex and economical status. The data was analysed by using 't test'.

Criteria for assessment

Assessment of clinical trial was done based upon the change in both subjective and objective parameters. Initial assessment was done before commencement of study and final assessment was done after 15 days of complete treatment.

Assessment of subjective parameters

Cough

0- No cough
1- Mild, single cough
2- Moderate, > 1 cough lasting < 5 sec.
3- Severe sustained cough or lasting for > 5 sec.

Breathlessness

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0- Not troubled by breathlessness except on strenuous exertion
1- Short of breath when hurrying on level ground or walking up a slight incline
2- Walk slower than contemporaries because of breathlessness or has to stop for breath when walking at own pace
3- Stops for breath after walking about 100 meters or stops after a few minutes of walking on level ground.
4- Too breathlessness to leave the house or breathlessness on dressing or undressing.

Chest pain

0- Absent
1- Present

Liver marker

	ALT	AST
0	<40	<40
1	40 - 80	40 - 80
2	>80 - 120	>80 - 120
3	> 120	> 120

The obtained data was analysed statistically with the help of 't test'. P value of < 0.05 was considered as statistically significant and P-value of < 0.01 and < 0.001 were considered as highly significant. Level of significant was noted and interpreted accordingly. Overall assessment of study was done by calculating the mean of parameters.

II. OBSERVATION AND RESULT

In the present study total 100 patients were enrolled and observed for the effect of therapy after 15 days of treatment.

Maximum number of patients were employed i.e. 45%. 30 % patients were housewife and remaining 25% patients were students. Which reveals communicable nature of the disease.Out of 100 patients 74 patients (74%) were from middle class family and remaining 26 patients (26%) were from lower class family. However, there is no significant relationship between disease and economical status of patients. 68% were non vegetarian and 32% patients were vegetarian. Diet has no influence on disease manifestation and its progression. 58% were of Vata Kaphaj prakriti while 30% patients were of Pitta Kaphaj prakriti and remaining 12% patients were of Vata Pitta prakriti It can be said that post covid symptoms are more prevalent in Vata Kaphaj prakriti due to similarity in disease prakriti.

In this study 100 patients of post covid symptoms were taken. Each patient was observed carefully on different parameters as mentioned in our study. Based on these observation necessary charts and graphs were made.

Age wise distribution of patient

Out of 100 patients 17 patients (17%) were of age group 21-30 years. 33 patients (33%) were of age group between 31- 40 years and remaining 50 patients (50%) were of age group between 41-50 years.

Sex wise distribution of patient

Above observation shows that there is almost equal distribution of symptoms of post Covid in both sexes. Incidence in Male was 51 (51%) and in Female was 49 (49%). It indicates that there is no relation of sex with the disease.

Cardinal symptoms wise distribution

In the present study, out of 100 patient 42 patients (42%) had symptoms of cough, 44 patient (44%) had chest pain, 60 patients (60%) had complaint of breathlessness, 50 patients (50%) had loss of appetite and all 100 patients (100%) had symptoms of fatigue.

Effect of treatment on Cough

Out of 100 patients of post covid symptoms 42 patients had symptom of cough. it was observed that out of 100 patients, before treatment 26 (26%) patients were suffering from severe or sustained cough lasting for more than 5 second, 16 patients (16%) were suffering from moderate cough lasting from 1 second to 5 second and remaining 58 patients (58%) had no complain of cough (Table 1.0). Which was fairly improved after treatment that is only 4 patients (4%) had complaint of mild or single cough and 96 patients (96%) had no symptoms of cough (Table 1.1). The result obtained on Cough showed statistically highly significant result with 'P' value <0.001as shown in the following table (Table 1.2)–

(Table 1.0) Severity of cough_BT		
	Frequency	Percent

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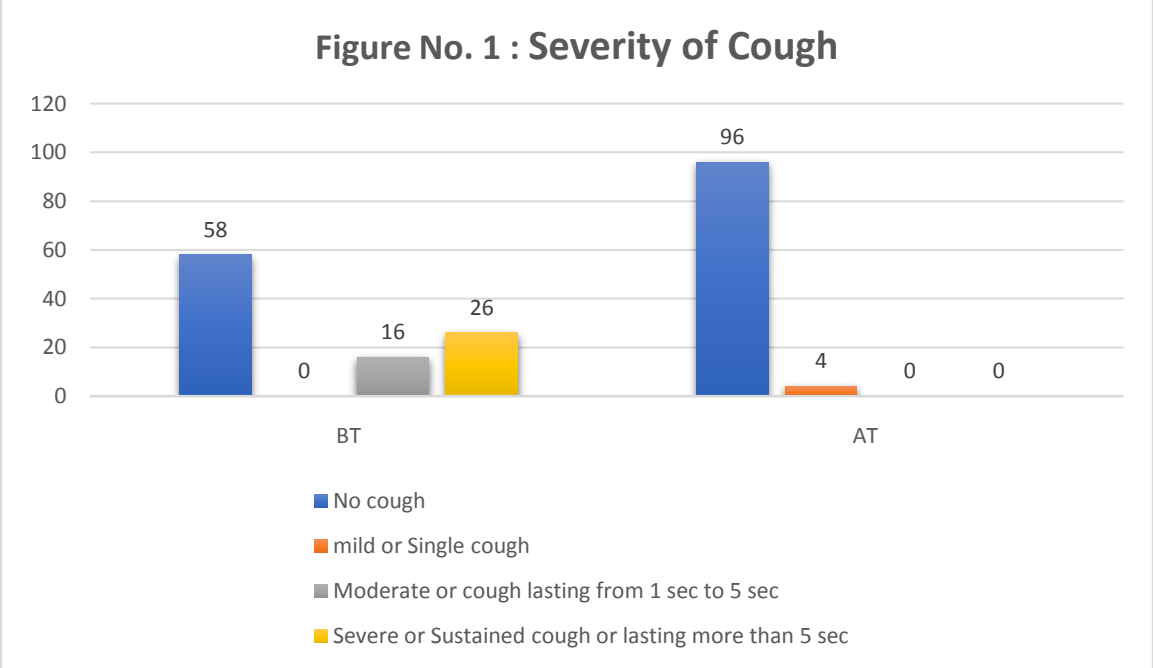
No cough	58	58.0
Mild or Single cough	0	0
Moderate or cough lasting from 1 sec to 5 sec	16	16.0
Severe or Sustained cough or lasting more than 5 sec	26	26.0
Total	100	100.0

(Table 1.1) Severity of cough_AT		
	Frequency	Percent
No cough	96	96.0
Mild or Single cough	4	4.0
Moderate or cough lasting from 1 sec to 5 sec	0	0
Severe or Sustained cough or lasting more than 5 sec	0	0
Total	**100**	**100.0**



(Table 1.2): Assessment of Improvement in Cough								
Symptoms	**Mean Score**			**Efficacy %**	**S.D**	**S.E Mean**	**t value**	**P value**
	BT	**AT**	**BT-AT**					
Cough	1.10	0.04	1.060	96.36 %	1.301	.130	8.146	<.001

Statistical analysis showed that mean score which was 1.10 before treatment was reduced to 0.04 after treatment with 96.36% improvement. It was statistically significant with ($p<0.001$). Results are graphically represented in Figure no.1.

Effect of treatment on Chest pain

Out of 100 patients 44 patients were suffered from Chest pain as mentioned in table(Table 2.0). Out of which there was improvement in 100% patients (Table 2.1).

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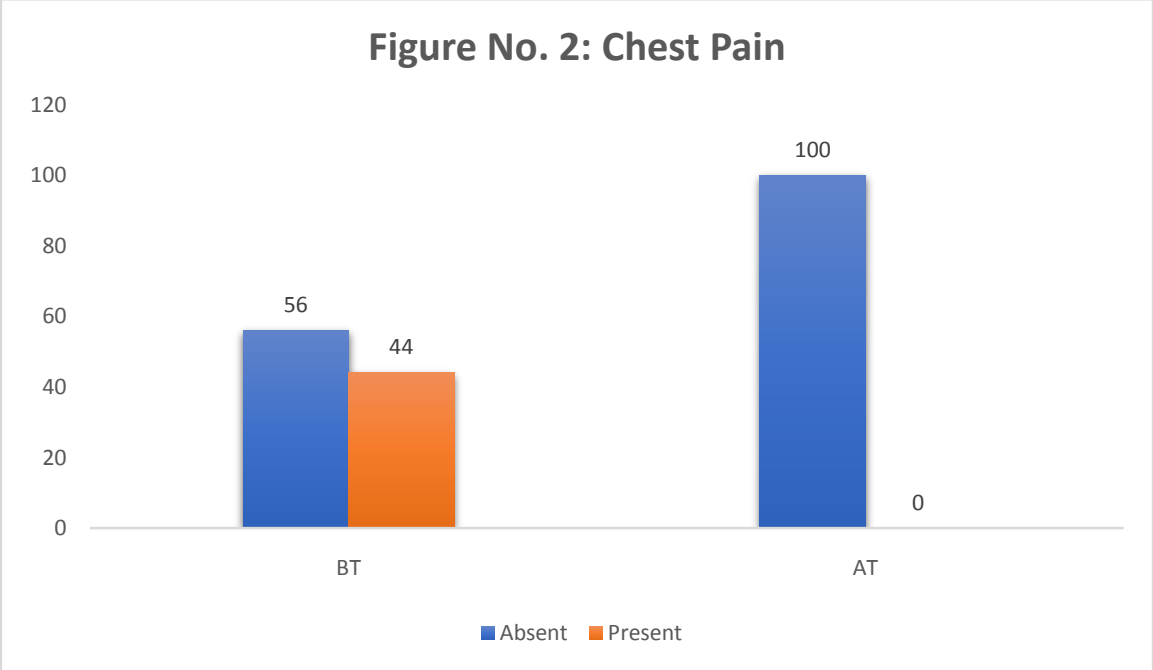
(Table 2.0): Complaint of Chest Pain_BT		
	Frequency	Percent
Absent	56	56.0
Present	44	44.0
Total	**100**	**100.0**

(Table 2.1): Complaint of Chest Pain_AT		
	Frequency	Percent
Absent	100	100.0
Present	0	0
Total	**100**	**100.0**



(Table 2.2): Assessment of Improvement in Chest pain								
Symptoms	**Mean Score**			**Efficacy %**	**S.D**	**S.E Mean**	**t value**	**P value**
	BT	**AT**	**BT-AT**					
Chest pain	0.44	.00	0.440	100 %	0.499	0.050	8.820	<.001

Statistical analysis showed that mean score was reduced to .00 from 0.44 with 100% efficacy. which was statistically significant with ($p<0.001$)(Table 2.2). Results are graphically represented in figure no.2.

Effect of treatment on Breathlessness

Out of 100 patients 60 patients had symptom of Breathlessness as shown in the table below. In that 18 patients (18%) had complaint of Breathlessness on walking about 100 meters, 29 patients (29%) had breathlessness on walking at their own pace, 13 patients (13%)had breathlessness on exertion or climbing upstairs while remaining 40 patients (40%) had no complaint of Breathlessness(Table 3.0). Condition was markedly improved after treatment as only 4 patients (4%) had breathlessness on exertion or walking upstairs while remaining 96 patients (96%) had no complaint of Breathlessness(Table 3.1). So,

result obtained on Breathlessness showed statistically highly significant result with 'P' value <0.001(Table 3.2).

(Table 3.0)Complaint of Breathlessness_BT		
	Frequency	Percent
No complaint	40	40.0
Breathlessness on Exertion or while climbing stairs	13	13.0
Breathlessness on walking at own pace	29	29.0
Breathlessness on alking about 100 meters	18	18.0
Total	**100**	**100.0**

(Table 3.1)Complaint of Breathlessness_AT		
	Frequency	Percent
No complaint	96	96.0
Breathlessness on Exertion or while climbing stairs	4	4.0
Breathlessness on walking at own pace	0	0
Breathlessness on alking about 100 meters	0	0
Total	**100**	**100.0**

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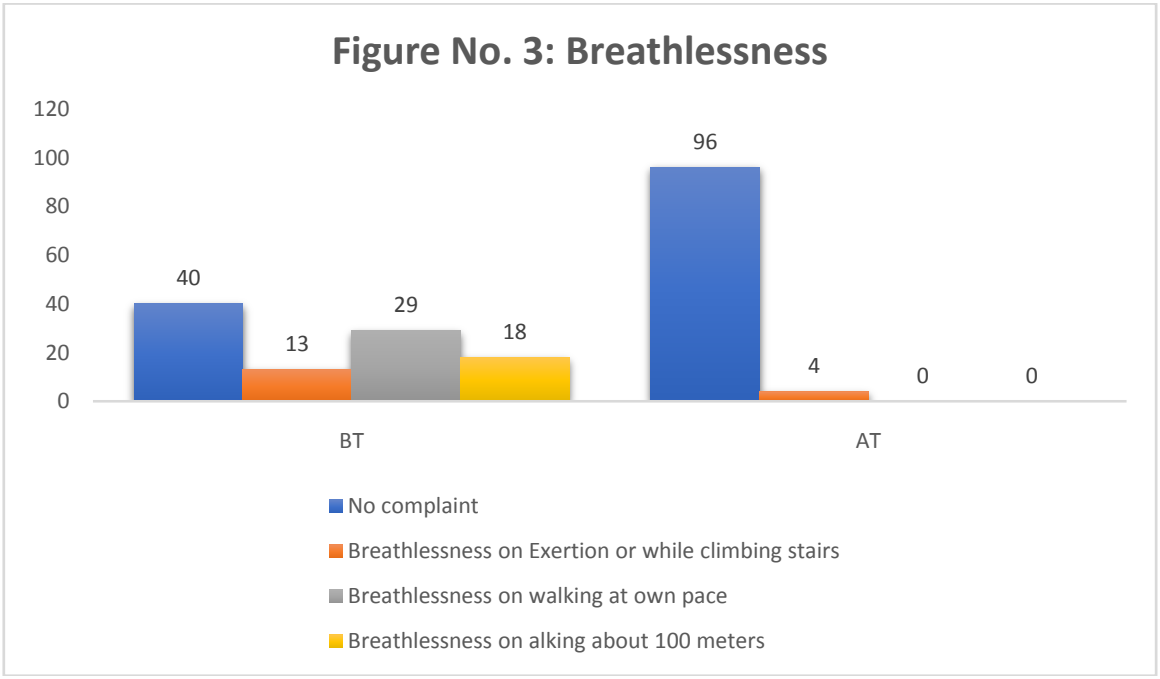

(Table 3.2): Assessment of Improvement in Breathlessness								
Symptoms	**Mean Score**			**Efficacy %**	**S.D**	**S.E Mean**	**t value**	**P value**
	BT	**AT**	**BT-AT**					
Breathlessness	1.25	0.04	1.210	96.80 %	1.131	0.113	10.700	<.001

Statistical analysis showed that mean score which was 1.25 before treatment was reduced to 0.04 after treatment with 96.80% improvement. It was statistically significant with ($p<0.001$). Result are graphically represented in Figure No. 3.

Effect of treatment on loss of appetite

Out of 100 patients 60 patients were suffered from loss of appetite as mentioned in the following table(Table 4.0).In that 60 patients, 50 patients (50%) had normal desire for food while in remaining 50 patients 24 patients (24%) had desire for food only after long internal, 22 patients (22%) had desire for food little late than normal time and 4 patients (4%) were eating timely without much desire. After treatment it was observed that 8 patients (8%) were eating timely without much desire and rest 92 patients (92%) had normal desire for food(Table 4.1). So, result obtained were highly significant with 'P' value <0.001(Table 4.2).

(Table 4.0)Loss of Appetite_BT		
	Frequency	Percent
Normal desire for food	50	50.0
Eating timely without much desire	4	4.0
Desire for food little late than normal time	22	22.0
Desire for food only after long Interval	24	24.0
Total	**100**	**100.0**

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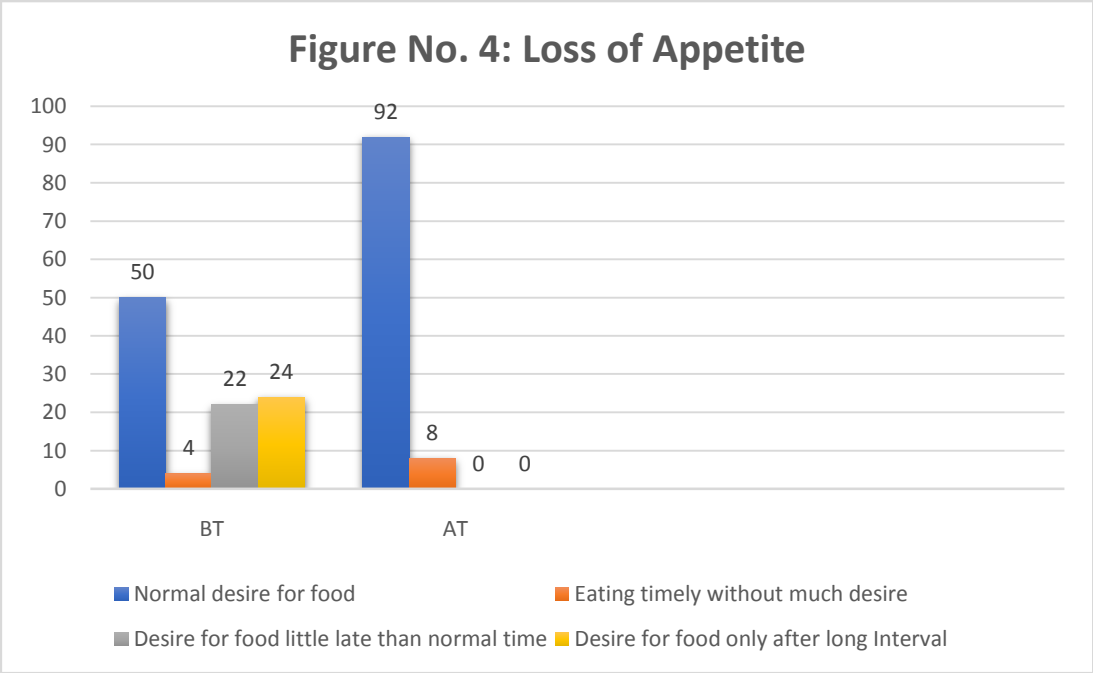
(Table 4.1)Loss of Appetite_AT		
	Frequency	Percent
Normal desire for food	92	92.0
Eating timely without much desire	8	8.0
Desire for food little late than normal time	0	0
Desire for food only after long Interval	0	0
Total	**100**	**100.0**



(Table 4.2): Assessment of Improvement in Loss of appetite								
Symptoms	**Mean Score**			**Efficacy %**	**S.D**	**S.E Mean**	**t value**	**P value**
	BT	**AT**	**BT-AT**					
Loss of appetite	1.20	0.08	1.120	93.34 %	1.225	0.122	9.143	<.001

Statistical analysis showed that mean score was reduced to 0.08 from 1.20 with 93.34% after treatment which was statistically significant with ($p<0.001$). Results are graphically represented in figure no. 4.

Effect of treatment on Fatigue

Out of 100 patients all patients had symptom of Fatigue as shown in the following table. In that 100 patients 28 patients were bed bound and dependent on others, 50 patients (50%) were house bound and remaining 22 patients (22%) had with their activity reduced by 50%(Table 5.0). However condition was fairly improved after treatment i.e. 75 patients had no complaint of Fatigue, 24 patients had with their activity reduced by 50% and only 1 patient was house bound(Table 5.1). The result obtained on Chest pain showed statistically highly significant result with 'P' value <0.001(Table 5.2).

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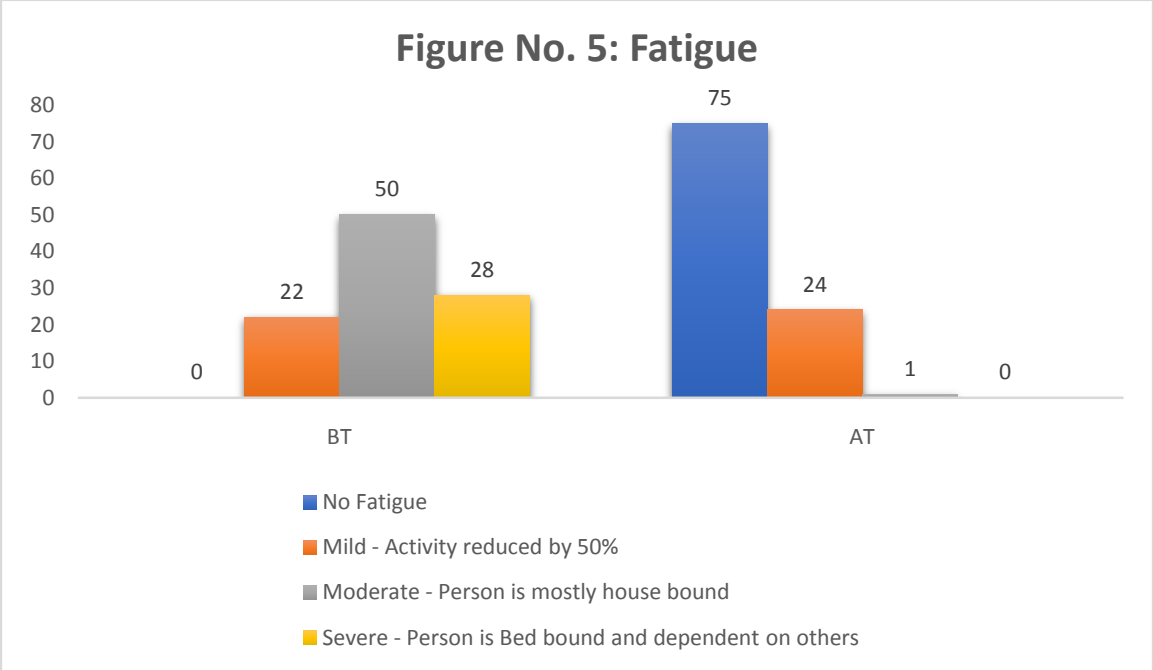
(Table 5.0): Complaint of Fatigue_BT		
	Frequency	Percent
No Fatigue	0	0
Mild - Activity reduced by 50%	22	22.0
Moderate - Person is mostly house bound	50	50.0
Severe - Person is Bed bound and dependent on others	28	28.0
Total	**100**	**100.0**

(Table 5.1): Complaint of Fatigue_AT		
	Frequency	Percent
No Fatigue	75	75.0
Mild - Activity reduced by 50%	24	24.0
Moderate - Person is mostly house bound	1	1.0
Severe - Person is Bed bound and dependent on others	0	0
Total	**100**	**100.0**



(Table 5.2): Assessment of Improvement in Fatigue								
Symptoms	**Mean Score**			**Efficacy %**	**S.D**	**S.E Mean**	**t value**	**P value**
	BT	**AT**	**BT-AT**					
Fatigue	2.06	0.26	1.800	87.37 %	0.620	0.062	29.053	<.001

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Statistical analysis showed that mean score which was 2.06 before treatment was reduced to 0.26 after treatment with 87.37% improvement. It was statistically significant with ($p<0.001$). Results are graphically represented in figure no. 5.

Effect of treatment on objective parameters

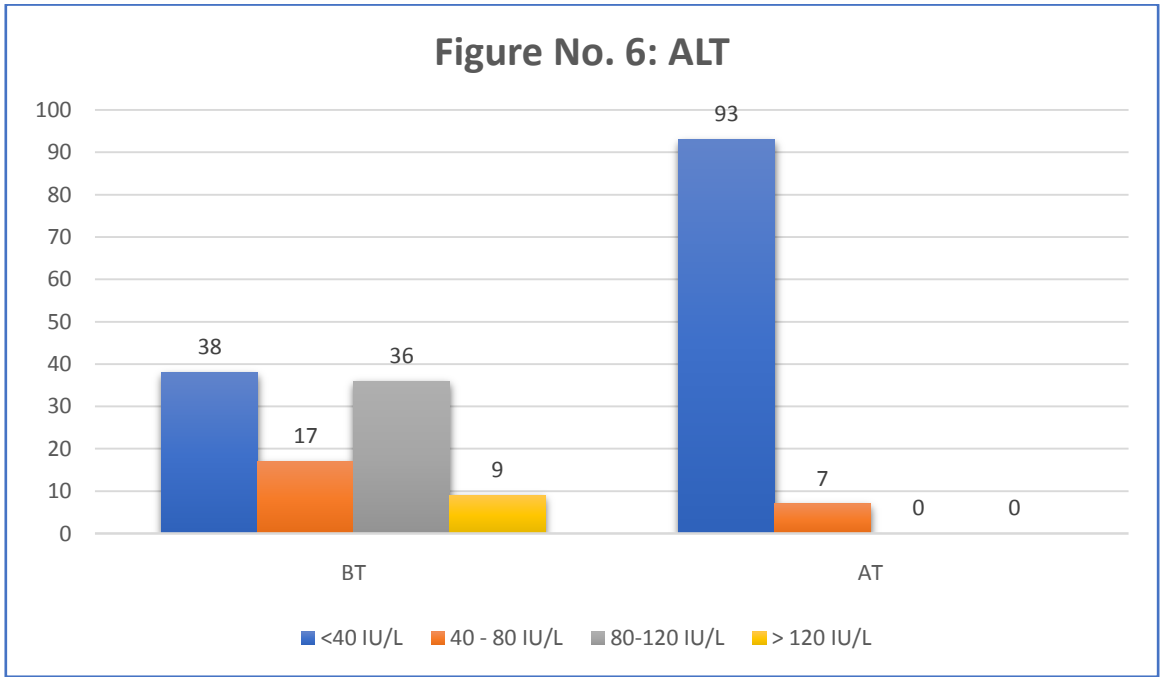
Statistical analysis of result showed significant level of reduction in the intensity of all the objective parameter like ALT as shown in the table 6.0 & 6.1 for BT and AT respectively and of AST as shown in the table 7.0 & 7.1 for BT and AT respectively –

(Table 6.0): Liver Marker – ALT_BT

	Frequency	Percent
<40 IU/L	38	38.0
40 - 80 IU/L	17	17.0
80-120 IU/L	36	36.0
> 120 IU/L	9	9.0
Total	**100**	**100.0**

(Table 6.1): Liver Marker – ALT_AT

	Frequency	Percent
<40 IU/L	93	93.0
40 - 80 IU/L	7	7.0
80-120 IU/L	0	0
> 120 IU/L	0	0
Total	**100**	**100.0**



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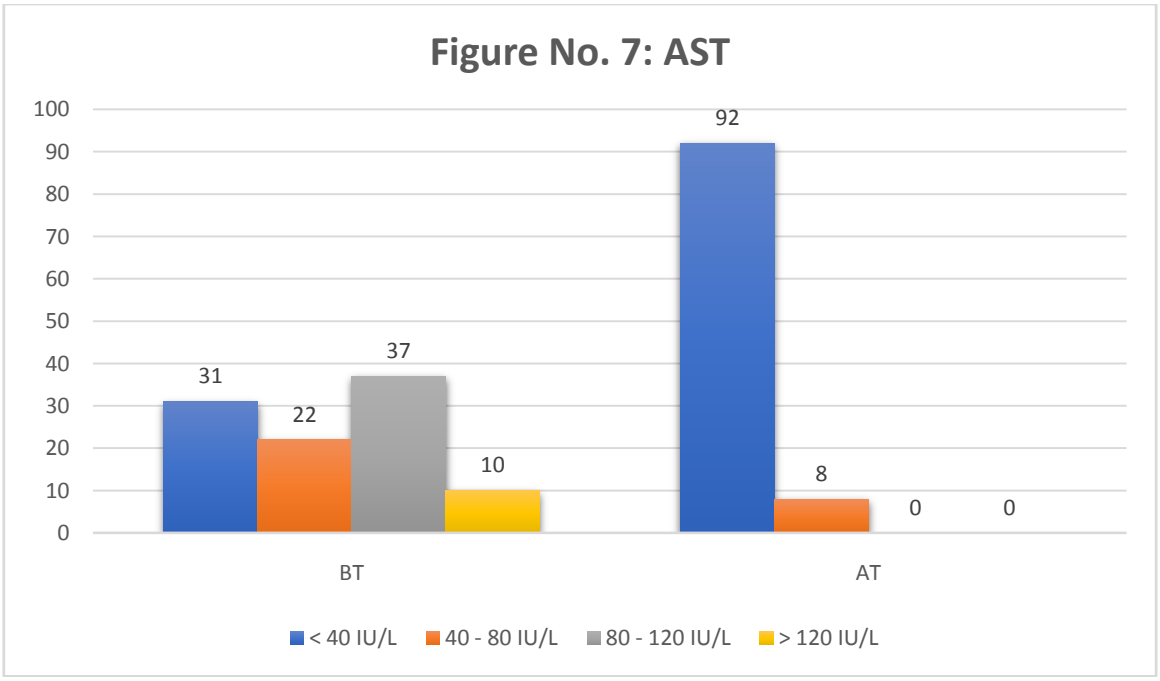
(Table 6.2): Assessment of Improvement inLiver Marker -ALT								
Symptoms	**Mean Score**			**Efficacy %**	**S.D**	**S.E Mean**	**t value**	**P value**
	BT	**AT**	**BT-AT**					
ALT	1.16	0.07	1.090	93.96 %	0.996	0.100	10.945	<.001

Mean score of ALT which was 1.16 before treatment was reduced to 0.07 after treatment with 93.96% improvement. It was statistically significant with p<0.001(Table 6.2). Results are graphically represented in figure no. 6.

(Table 7.0): Liver Marker – AST_BT		
	Frequency	Percent
< 40 IU/L	31	31.0
40 - 80 IU/L	22	22.0
80 - 120 IU/L	37	37.0
> 120 IU/L	10	10.0
Total	**100**	**100.0**

(Table 7.1): Liver Marker – AST_AT		
	Frequency	Percent
< 40 IU/L	92	92.0
40 - 80 IU/L	8	8.0
80 - 120 IU/L	0	0
> 120 IU/L	0	0
Total	**100**	**100.0**



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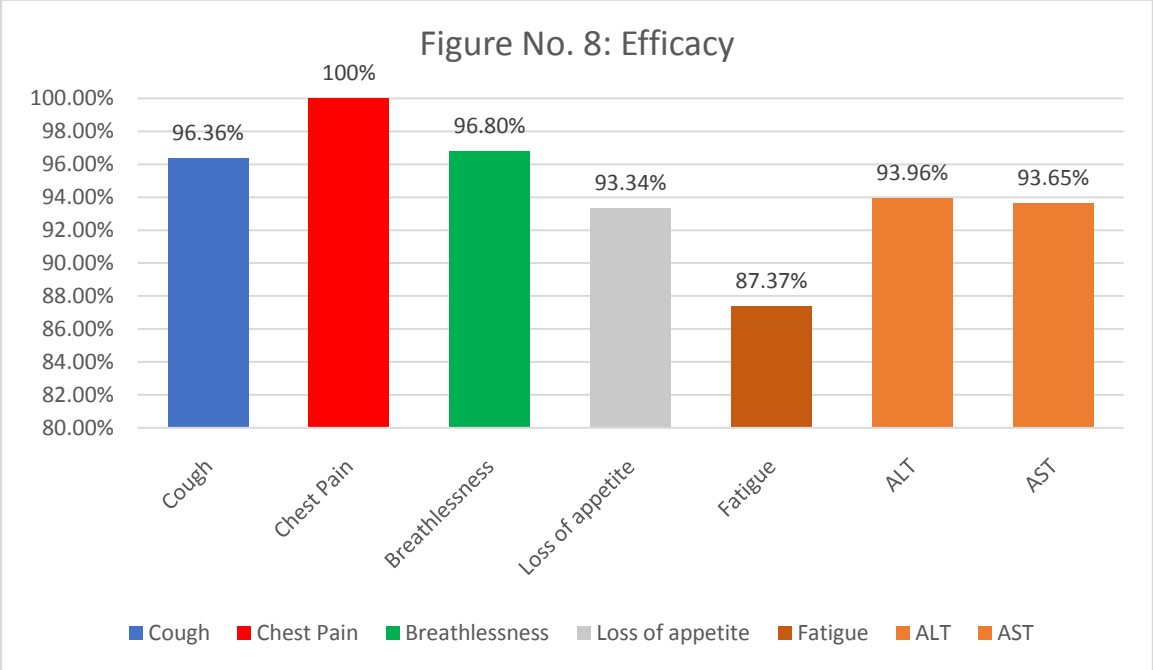
(Table 7.2): Assessment of Improvement inLiver Marker -AST								
Symptoms	Mean Score			Efficacy %	S.D	S.E Mean	t value	P value
	BT	AT	BT-AT					
AST	1.26	0.08	1.180	93.65 %	0.957	0.096	12.324	<.001

Mean score of AST which was 1.26 before treatment was reduced to 0.08 after treatment with 93.65% improvement. It was statistically significant with p<0.001(Table 7.2). Results are graphically represented in figure no. 7.

Overall Efficacy of this treatment in different Symptoms of Post Covid Syndrome are represented in Figure No. 8



OVERALL EFFICACY OF TREATMENT IN DIFFERENT PARAMETERS

III. DISCUSSION

After 15 days of complete treatment, we had observed that there was 100 % relief in the symptoms of cough, breathlessness and chest pain. Also, symptoms of chronic fatigue were fairly improved. Here the subjective graded parameters are subjected to statistical evaluation using 't test' to evaluate the difference between before and after treatment and thereby to know the percentage of improvement.

Mode of action of Therapeutic interventions on Post Covid illness

For breathlessness, chest pain and cough we will follow shwas kasa line of treatment. So choice of drug will be like that which have Vata Kapha shamak property. For that we will understand pharmacodynamics and pharmacokinetics of ingredients of Kasa shwas hari rasa.

Kalmegh is beneficial for liver disease and it has been proven for its anti-oxidant, anti-inflammatory and hepatoprotective properties. It prevents damage of liver cells caused by the free radicals.[8] Researchers has identified many active herbal ingredients of guduchi like alkalois, glycosides and lactones. These compounds have ability to regulate the immune system and other physiological functions. Shunti churna helps to digest fatty foods and break down proteins. Also, it helps reducing inflammation. Amla pitta mishran is a standard drug of dhutpapeshwar which is excellent pitta shamak. It is effective in agnimandya and aruchi by regularising pitta secretion. It contains vasa, nimba,pittapapada, nimba, chiraita, bhringraj, triphala,patol, yashtimadhu, shouktika bhasma which strengthens annavaha srotas bye reestablishing metabolic activity. Amastha avaleha is an effective bronchodilator and effective expectorant with vasa, yashtimadhu, haridra, amla, giloy, tulsi. All these

ingredients have anti allergic and anti-pollution properties.

Ingredienrts of Kasa Shwas hari rasa are Shwas kasa chintamani rasa (swarnayukta)**,** Laxmivilas rasa (nardeeya)**,** Sootashekhar rasa (plain)andTalishadi choorna. For bhavna dravya Vasa swaras is used.

Shwas kasa chintamani rasa which is a herbo-mineral preparation and indicated in hikka Shwasa roga (Bh.R.). Being swarnayukta along with other ingredients, it is Kaphaghna, Shwasghna and Rasayan in action thus beneficial in Shwas and Kasa. It gives strength to respiratory tract and increases the immunity as well. Most of the ingredients have katu, tikta rasa, ushna virya thus having Vata kapha shamak properties. Being herbo mineral preparation, due to nano particle size it has ability to penetrate into the smallest units in the body and have therapeutic benefit when administerd correctlyeven in smaller doses.[9]

In Nardiya laxmi vilas rasa most of the ingredients have their action on Vata and Kapha doshas. Also, it is mainly indicated in respiratory tract disorders. As it is aherb-mineral preparation, this drug can swiftly undergo various pharmacodynamics and pharmacokinetics in our body called sansakar. Also, this drug reaches to various minute channel of body because of their micronized preparation and are therapeutically effective in low doses.[10]

Talishadi churna is mainly effective in Vata and Kapha imbalance disease therefore indicated in Kasa andShwas. It is very effective in patients of viral fever associated with cough and cold symptoms. It is effective in treating gastrointestinal disorder specially vatanulomaka in action. In shwas roga disease of origin is pranavaha srota (Respiratory symptoms) and its moolasthana is mahasrotas(GIT). So Talishadi churna is selected as it has effect on both Pranavaha and Mahasrotas. Talish patra is reported for its broncho dilatory effect. It is also effective in condition of Aruchi (loss of appetite) due to katu and tikta rasatmak properties of marich, Sunthi and Talishpatra. Thus, have effect on long tail of covid 19.[11]

Sutshekhar rasa is pitta shamak and vatanulomak in action beneficial in gastroesophageal reflux disease which aggravate the symptoms of shwasa. Since it a herbo-mineral preparation, it has ability of greater absorption in the body tissue. It reaches the micro channels of the body and shows its action. Here pitta shamak property of drug has influencing action on liver marker i.e., ALT and AST.[12]

In Kasa shwasa hari rasa Vasa swaras is used as bhawna dravya. Bhawna dravya plays important role in Shodhana process. The mineral raw material needs to be processed before internal use to make them absorbable and digestible. It is a type of sanskar which alters the original properties of raw material and induces the new properties into the main drugs through the various liquid (extracts and juices) which act as catalyst to direct the all-chemical transformation of original ingredients.

Vasa has mucolytic, expectorant and broncho-dilatory action. So, it is greatly used in respiratory troubles. It has tikta and kasaya rasa, katu vipaka and sheeta virya so pacifies Vata and Pitta dosha. After bhawana with Vasa swaras all properties of Vasa are incorporated into this drug thus increases its potency.[13]

Most of the ingredients of Kasa shwasa hari rasa are mineral compound which shows rasayana property (reaches the micro- channel of the body very quickly due to its micronized preparation). Hence shows excellent result in chronic fatigue syndrome.

IV. CONCLUSION

The present study revealed that efficacy of treatment given was safe and effective in post covid symptoms without any reported adverse reaction. The drug was well accepted by patients. In the pathology of post covid illness along with Vata and Kapha there is involvement of Pitta dosha also. HenceKasa Shwas hari rasa along with other medicine showed significant result in all the subjective parameters of Post covid illness as well as objective parameters like Liver markers.

In this study weobserved that treatment was very effective in post Covidinfection without further detereoration of the disease.