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A Conceptual Study Of *Kala* And Its Applied W.S.R To Diseases Occurring In *Sharata Ritu*

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ABSTRACT: -

Introduction- As per *Ritu Kriyakala Pitta Prakopa* occurs in *Sharata Ritu*, which results in *Sharataritujanya Vikaras* in human being. In order to pacify the aggravated *Pitta*, *Samana* therapy with *Kakolyadigana* drug in *Hima* form which is mentioned in *Sushruta Samhita* had been taken for study.

Aim and Objective- To study the efficacy of *Kakolyadi Gana Hima* in various *Pitta-Rakta janya* diseases occurring in *Sharata Ritu*

Materials and methods- 100 no. of patients were selected and kept on 'Kakolyadigana drugs in *Hima* form' 30 ml twice daily in empty stomach for a period of 10 days. All patients were investigated for DC, TLC, ESR, Hb gm% before and after treatment. The collected data was distributed according to different demography and *Prakriti Pareeksha*. The assessment of the subjective and objective parameters were evaluated by statistical w-test & paired t-test.

Observation and results:- It had been observed that, the trial drug is statistically significant at level of 5% ($p < 0.5$) to reduce both parameters.

Discussion and Conclusion- Finally it can be said that the trial drug could be the best means for management of *Pitta Vikara in Sharata ritu*. During the entire duration of therapy, there was no found any adverse effect of drug reaction.

Keywords- *Kala, Sharata Ritu, Paittik Vikara, Kakolyadigana Hima.*



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INTRODUCTION

A living person is the product of *Kala* (Time). Diseases occurring in the persons are considered to be caused by *Kala*. Ayurveda has given great importance to the *kala* for the *swastha purusha* (healthy person) as well as *atura purusha* (ill person).^[1] *Kala* (Season) is divided into two *Ayanas* i.e. *Uttarayana* and *Dakshinayana*.^[2] Each *Ayana* consists of 3 *Ritus*. Strength of the person is highest in *Visarga Kala* and lowest in *Adana Kala*. *Sharata Ritu* (Autumn) comes under middle part of the *Visarga Kala*, at that time strength of the person remains medium.^[3] On the basis of *Kriyakala*, *Sharata Ritu* (Autumn) is a time where aggravation of *Pitta dosha* takes place.^[4] The body that is habituated to *Shita guna* of *Varsha ritu*, when suddenly get exposed to heat of the sun rays, the *pitta* which was accumulated in rainy season gets provoked by *Ushna guna* (hot) of this season. This result in the *Prakopa* (aggravation) of *pitta dosha*.^[5] As *Rakta dhatu* (blood) is the *yoni* of *pitta dosha*, diseases related to *Rakta* are also bound to occur. *Shamana* therapy (Pacification) with *Madhura* (sweet), *Tikta* (bitter), *Kasaya rasa* (astringent) with *Sita Virya* and *Madhura Vipaka* Dravya in *Sharata ritu* (Autumn) for preventing and controlling aggravated *Pitta dosha* ^[6]. So for better and safety treatment Ayurvedic herbal preparation *Kakolyadigana drugs in Hima* form is selected for present research study.^[7]

AIMS AND OBJECTIVE

To study the concept of *Kala* (time) according to Ayurveda in detail.

1. To study the concept of time according to modern medical science in detail.
2. To explain the role of *Kala* in causation of diseases in *Sharata Ritu* (Autumn).
3. To find out and establish the diseases of aggravated *Pitta* and vitiated *Rakta* occurring in *sharat ritu*.
4. To study the efficacy of *Kakolyadi Gana* drugs in various *pitta-Rakta janya* diseases occurring in *sharat ritu*.

MATERIALS AND METHODS

CTRI Number- CTRI/2021/02/030931

IEC Number- 1249/G.A.C & H, Dt. 14/05/2019

Selection of Patients

The total 100 patients had been selected by a special proforma covering demography along with both Subjective and Objective criteria's from OPD of Govt. Ayurvedic College & Hospital, Balangir and Saradeswari Govt. Ayurvedic Hospital, Balangir. Before treatment consent of each patient was taken.

Inclusion criteria:-

- Common seasonal diseases occurring in *Sharata Ritu* related to *pitta-rakta dusti*.
- Patients age between 12-70 yrs of either sex.

Exclusion criteria:-

- Age below 12 yrs. and above 70 yrs.
- Patients having chronic systemic disorders like Diabetes, Hypertention, Ischemic heart disease, HIV, an infective and contaminated diseases etc.

Criteria for Investigations DLC, TLC, ESR, Hb gm% were investigated before treatment and after treatment.

Selection of drug:- One drug formulation was selected i.e. “*Kakolyadigana Drugs*” in *Shita Kasaya(Hima) form for Pittadustijanya Vikaras and Raktadustijanya Vikaras in Sharata Ritu*. Each drugs of *Kakolyadigana* were identified by the experts of Dept. of *Dravya guna*, which were approved by DRC and IEC of college and Sambalpur University.

Table No- 01

Table showing the distribution of 100 patients of *Sharataritujanya Vikaras* on the basis of the symptoms and percentage of improvement were observed.

Name of the symptoms	No. of Patients	% of patients	Total Score		Percentage of relief
			BT	AT	
Subjective Criteria					
<i>Atisweda</i>	40	40 %	78	23	70.51
<i>Atidourgandhya</i>	15	15 %	19	03	84.21
<i>Twak daha</i>	23	23 %	32	05	84.38
<i>Tikta asyta</i>	18	18 %	24	08	66.67
<i>Lavana asyata</i>	21	21 %	30	08	73.33
<i>Putimukhata</i>	07	07 %	13	05	60.00
<i>Asyavipaka</i>	04	04 %	08	04	50.00
<i>Galapaka</i>	02	02 %	03	01	66.66
<i>Raktamandal</i>	07	07 %	10	04	60
<i>Atrupty</i>	24	24 %	41	12	70.73
<i>Trushna adhikya</i>	48	48 %	93	34	63.44
<i>Tamaprabesha</i>	17	17 %	29	13	55.17
<i>Vaibarnya</i>	08	08 %	18	08	55.56
<i>Agnisada</i>	14	14 %	33	15	54.54
<i>Kandu</i>	25	25 %	51	20	60.78
<i>Amlaudgirana</i>	76	76 %	168	54	67.85
<i>Haridra mutra</i>	07	07 %	08	01	87.50

Medicine was prepared as per GMP certified method in Govt. Ayurvedic Pharmacy, Balangir under supervision of expert Pharmacy.

Dose- *Kakolyadigana Hima*- 30 ml twice daily in empty stomach.

Assessment Criteria- 100 no. of patients, satisfying the inclusion criteria, had been taken for the present study and the assessment had been made before and after treatment. The overall assessment was done considering the percentage relief of both parameters and statistical evaluation.

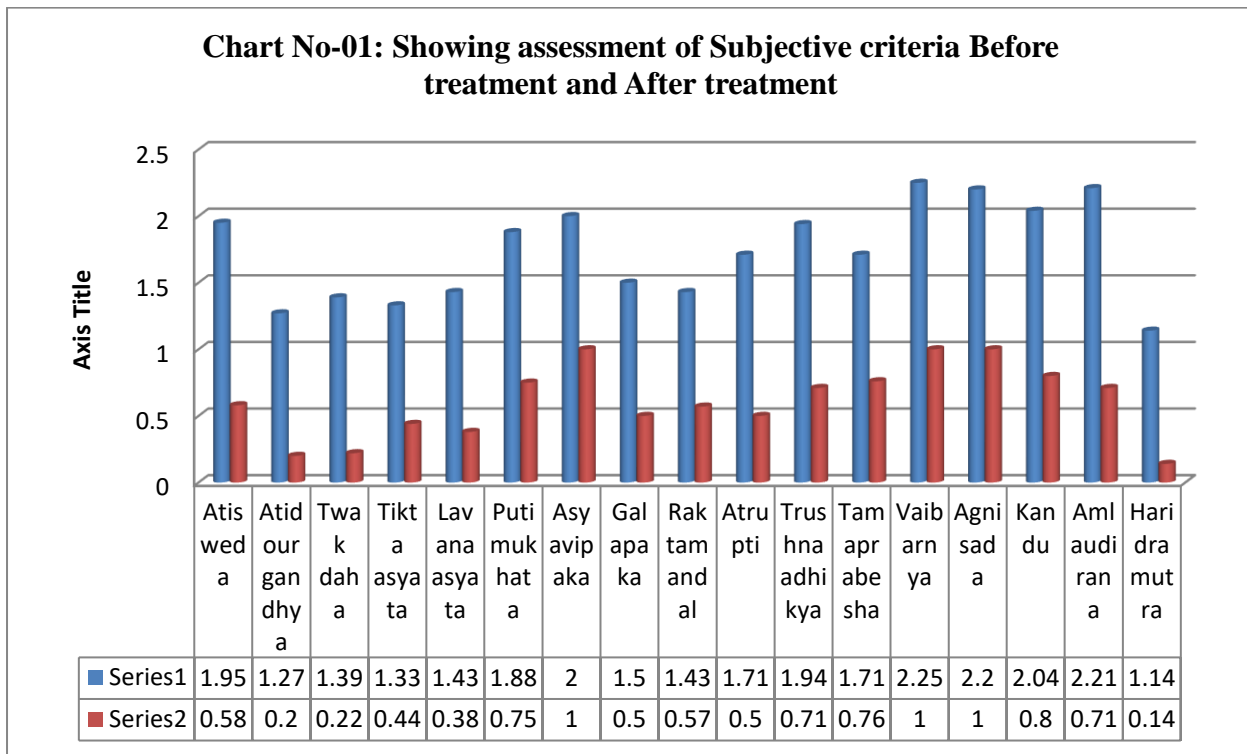
OBSEVATION AND RESULTS-

Different clinical features were observed during clinical study.

Objective Criteria			
	No. Of Patient	% of Patient	% relief
Neutrophil	100	100%	0.31
Eosinophil	100	100%	28.86
Basophil	100	100%	50.00
Lymphocyte	100	100%	02.36
Monocyte	100	100%	68.85
TLC	100	100%	01.98
ESR	100	100%	03.46
Hemoglobin	100	100%	10.66

Table No- 02:-Showing Statistical Analysis of subjective criteria and Objective criteria.(n=100)

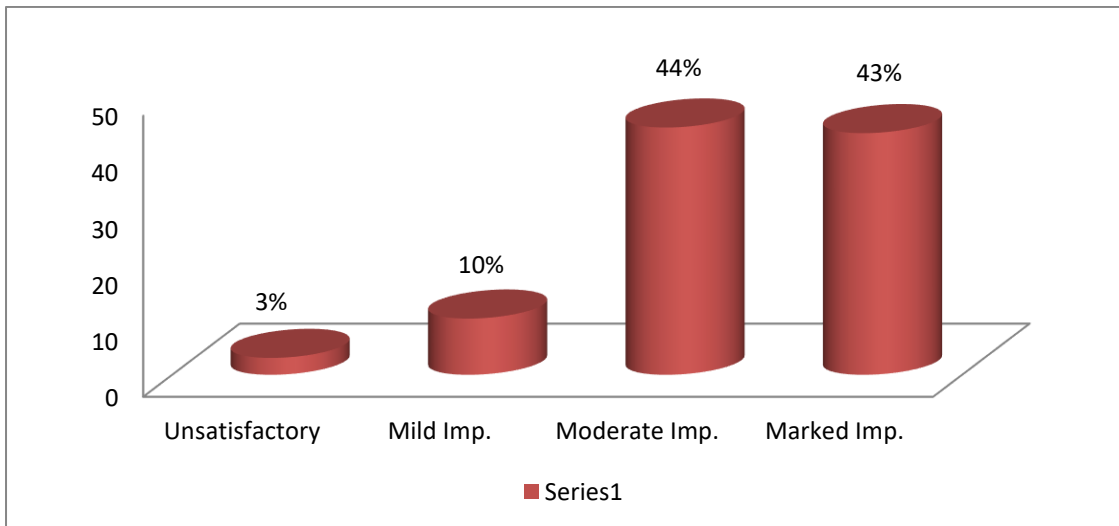
Symptoms	BT/AT	Mean	Median	SD	W- Value	P-Value	Result
<i>Atisweda</i>	BT	1.95	2.00	0.81	-5.719	0.000001	P<0.05
	AT	0.58	0.50	0.64			
<i>Atidourgandhya</i>	BT	1.27	1.00	0.46	-3.771 ^a	0.000162	P<0.05
	AT	0.20	0.00	0.41			
<i>Twak daha</i>	BT	1.39	1.00	0.66	-4.508 ^a	0.000007	P<0.05
	AT	0.22	0.00	0.42			
<i>Tikta asyta</i>	BT	1.33	1.00	0.59	-3.771 ^a	0.000162	P<0.05
	AT	0.44	0.00	0.62			
<i>Lavana asyata</i>	BT	1.43	1.00	0.60	-4.119 ^a	0.000038	P<0.05
	AT	0.38	0.00	0.50			
<i>Putimukhata</i>	BT	1.88	2.00	0.35	-2.460 ^a	0.013874	P<0.05
	AT	0.75	1.00	0.46			
<i>Asyavipaka</i>	BT	2.00	2.00	0.00	-1.732 ^a	0.033265	P<0.05
	AT	1.00	1.00	0.00			
<i>Galapaka</i>	BT	1.50	1.50	0.71	-1.414 ^a	0.041573	P<0.05
	AT	0.50	0.50	0.71			
<i>Raktamandal</i>	BT	1.43	1.00	0.53	-2.121 ^a	0.033895	P<0.05
	AT	0.57	1.00	0.53			
<i>Atrupty</i>	BT	1.71	2.00	0.69	-4.284 ^a	0.000018	P<0.05
	AT	0.50	0.00	0.59			
<i>Trushna adhikya</i>	BT	1.94	2.00	0.67	-5.938 ^a	0.000000	P<0.05
	AT	0.71	1.00	0.68			
<i>Tamaprabesha</i>	BT	1.71	2.00	0.69	-3.557 ^a	0.000375	P<0.05
	AT	0.76	1.00	0.83			
<i>Vaibarnya</i>	BT	2.25	3.00	1.04	-2.232 ^a	0.025597	P<0.05
	AT	1.00	1.00	1.07			
<i>Agnisada</i>	BT	2.20	2.00	0.56	-3.448 ^a	0.000565	P<0.05
	AT	1.00	1.00	0.76			
<i>Kandu</i>	BT	2.04	2.00	0.54	-4.206 ^a	0.000026	P<0.05
	AT	0.80	1.00	0.71			
<i>Amlaudgirana</i>	BT	2.21	2.00	0.82	-7.559 ^a	0.000000	P<0.05
	AT	0.71	1.00	0.80			
<i>Haridramutra</i>	BT	1.14	1.00	0.38	-2.530 ^a	0.011412	P<0.05
	AT	0.14	0.00	0.38			

Assessment of subjective criteria Before treatment & After treatment.**Objective Criteria**

PARAMETERS		MEAN	N	S.D	S.E	t-value	p-value	% change	Result
Neutrophil	BT	58.59	100	7.72	0.77	0.3259	0.7452	0.31	P>0.05
	AT	58.41	100	5.06	0.51				
Eosinophil	BT	3.43	100	1.98	0.20	6.5381	0.0000	28.86	P<0.05
	AT	2.44	100	0.90	0.09				
Basophil	BT	0.02	100	0.14	0.01	1.0000	0.3197	50.00	P>0.05
	AT	0.01	100	0.10	0.01				
Lymphocyte	BT	38.09	100	7.79	0.78	-	0.1297	02.36	P>0.05
	AT	38.99	100	5.33	0.53				
Monocyte	BT	0.61	100	0.74	0.07	5.2919	0.0002	68.85	P<0.05
	AT	0.19	100	0.49	0.05				
TLC	BT	9180.50	100	1399.06	139.91	3.9183	0.0002	01.98	P<0.05
	AT	8998.80	100	1244.38	124.44				
Hemoglobin	BT	12.21	100	2.08	0.21	-	0.0000	03.46	P<0.05
	AT	12.64	100	1.68	0.17				
ESR	BT	16.00	100	6.82	0.68	7.7550	0.0001	10.66	P<0.05
	AT	14.30	100	5.52	0.55				

Table No- 03: Showing Overall clinical assessment of Result in Paittik Vikaras.

Clinical Assessment	After Treatment	
	No. of Patients	% of Patient
Marked Improvement (76- 100 %)	43	43%
Moderate Improvement (50- 75%)	44	44%
Mild Improvement (25- 49%)	10	10%
Unsatisfactory (below 25%)	03	03%

**Table No- 04****Demography Incidence of Registered Patients.(n=100)**

Criteria	Maximum %	Category
Age	91%	<i>Madhyama avastha</i> (30- 60 yr)
Sex	58 %	Female
Religion	94%	Hindu
Marital Status	76%	Married
Socio-economical Status	52%	Middle class
Occupation	63%	House holder
Desha	100%	<i>Jangala</i>
Mode of onset	97%	Gradual
Family History	77%	Absent
Dietary status	88%	<i>Mixed diet</i>
Dietary Habit	43%	<i>Samashana</i>
Dominant of <i>Rasa</i>	49%, 48%, 34%	<i>Katu, Amla, Lavana</i>
<i>Agni</i>	44%	<i>Teekshnagni</i>
<i>Vyayama</i>	63%	Only routine work
Sleep	65%	Normal
Addiction	71%	Tea/Coffee
Bowel habit	73%	Normal

Table No-05**Incidence of Dahsavidha Pariksha Prakriti of Registered Patients. (n=100)**

Criteria	Maximum %	Category
<i>Prakriti</i>	44%, 34%	<i>Vata-Pittaja, Pitta-Kaphaja</i>
<i>Vikriti</i>	50%	<i>Alpabala Vikara</i>
<i>Sara</i>	66%	<i>Madhyama Sara</i>
<i>Samhanana</i>	56%	<i>Madhyama</i>
<i>Pramana</i>	48%	<i>Samasarira</i>
<i>Sattwa</i>	68%	<i>Madhyama</i>
<i>Satmya</i>	73%	<i>Madhyama</i>
<i>Ahara Shakti</i>	50%	<i>Pravara Ahara Shakti</i>
<i>Vyayama Shakti</i>	51%	<i>Madhyama Vyayama Shakti</i>
<i>Vaya</i>	91%	<i>Madhyama Vaya avastha</i>

Table No-06**Pharmacodynamic properties of Kakolyadigana drugs**

Name of Drugs	Rasa	Guna	Virya	Vipaka	Doshaghna
<i>Aswagandha</i>	<i>Madhura, Tikta, Katu</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vata-Kapha</i>
<i>Satavari</i>	<i>Madhura, Tikta</i>	<i>Guru, Snigdha</i>	<i>Sita</i>	<i>Madhura</i>	<i>Vata-Pitta</i>
<i>Guduchi</i>	<i>Tikta, Kasaya</i>	<i>Guru, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosha</i>
<i>Vidarikanda</i>	<i>Madhura</i>	<i>Guru, Snigdha</i>	<i>Sita</i>	<i>Madhura</i>	<i>Vata-Pitta</i>
<i>Barahikanda</i>	<i>Madhura, Katu, Tikta</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosha</i>
<i>Karkatsringi</i>	<i>Kasaya, Tikta</i>	<i>Laghu, Rukshya</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata-Kapha</i>
<i>Jeevanti</i>	<i>Madhura</i>	<i>Laghu, Snigdha</i>	<i>Sita</i>	<i>Madhura</i>	<i>Vata-Pitta</i>
<i>Surpaparni dwaya</i>	<i>Madhura</i>	<i>Laghu, Rukshya</i>	<i>Sita</i>	<i>Madhura</i>	<i>Vata-Pitta</i>
<i>Padmak</i>	<i>Kasaya, Tikta</i>	<i>Laghu</i>	<i>Sita</i>	<i>Katu</i>	<i>Kapha-Pitta</i>

DISCUSSION:-

(Table No- 01) Study reveals *Paittik Vikaras* (Subjective Parameter) and (Objective Parameter) were taken into consideration.

(Table No-01, 02) in Subjective Parameter, it had been observed that,

In case of *Atisweda*, before treatment the mean score was 1.59 which reduced to 0.58 with 70.51 % mean percentage of improvement after treatment.

Atidourgandhya, Initial mean score was 1.27 which reduced to 0.20 with 84.21 % mean percentage of improvement after treatment.

Twak daha, before treatment mean score was 1.39 which reduced to 0.22 with 84.38% mean percentage of improvement after treatment.

Tikta asyata, the mean score was 1.33 before treatment which reduced to 0.44 with 66.67% mean percentage of improvement after treatment.

Lavana asyata, before treatment the mean score was 1.43 which reduced to 0.38 with 73.33% mean percentage of improvement after treatment.

Putimukhata, before treatment the mean score was 1.88 which reduced to 0.75 with 60.00% mean percentage of improvement after treatment.

Asyavipaka, before treatment the mean score was 2.00 which reduced to 1.00 with 50% mean percentage of improvement after treatment.

Galapaka, the mean score was 1.50 which reduced to 0.50 with 66.67% mean percentage of improvement after treatment.

Raktamandal, before treatment the mean score was 1.43 which reduced to 0.57 with 60% mean percentage of improvement after treatment.

Atrupti, before treatment the mean score was 1.71 which reduced to 0.50 with 70.73% mean percentage of improvement after treatment.

Trushna adhikya, before treatment the initial mean score was 1.94 which reduced to 0.71 with 63.44% mean percentage of improvement after treatment.

Tamaprabesha, before treatment the mean score was 1.71 which reduced to 0.76 with 55.17% mean percentage of improvement after treatment.

Vaibarnya, mean score was 2.25 before treatment which reduced to 1.00 with 55.56% mean percentage of improvement after treatment.

Agnisada, before treatment the mean score was 2.20 which reduced to 1.00 with 54.55% mean percentage of improvement after treatment.

Kandu, before treatment the mean score was 2.04 which reduced to 0.80 with 60.78% mean percentage of improvement after treatment.

Amlaudgirana, before treatment the initial mean score was 2.21 which reduced to 0.71 with 67.865 mean percentage of improvement after treatment.

In **Objective Parameter**, it had been observed that,

TLC, before treatment the mean score was 9180.50/cumm which reduced to 8998.80/cumm with 1.98% of mean percentage of improvement after treatment.

Hemoglobin, before treatment the initial mean score was 12.21 which increased to 12.64 with

3.46% of mean percentage improvement after treatment.

ESR, before treatment the mean score was 16.00 which reduced to 14.30 with 10.66% of mean percentage of improvement after treatment.

More than 80 % relief was noticed in the symptoms like *Haridramutra* (87.50%) *Atidourgandhya* (84.21%) and *Twak daha* (84.38%). More than 70 % relief was noticed in the symptoms like *Atisweda* (70.51%), *Lavana asyata* (73.33%) and *Atrupty*(70.73%). More than 60 % relief was observed in the symptoms like *Tikta asyata* (66.67%), *Raktamandal* (60%), *Trushna adhikya* (63.44%), *Kandu* (60.78%), *Amlaudgirana* (67.86%), *Galapaka* (66.67%) and *Putimukhata* (60%). The symptoms like *Tamaprabesha* (55.17%), *Vaibarnya* (55.56%), *Agnisada* (54.55%), *Asyavipaka* (50%) have shown alleviation to the extent of more than 50 %. It had been observed that there were mild changes in objective parameters after treatment. Overall effect of *Kakolyadigana drugs in Shita Kasaya (Hima) form on Paittik Vikaras* was 66.55 %.

(Table No- 03) – It had been observed that, as per after treatment procedure 43% (43) had got marked improved, 44% (44) had got moderate recovered, 10% (10) had got mild recovered and only 03% (03) had shown unchanged result.

(Table No-04) – It had been observed on *Demography incidence* that both male and female of middle age group, belongs to *Jangala desha*, middle class family, married, mix diet with *Samashana* habit, addiction of taking tea & coffee and having normal bowel habit were prone to *Paittik Vikaras*.

(Table No-05) – Individual *Dashavidha-Pariksha* (ten-fold examination) was covered

and observed that the *Vata – Pittaja and Pitta-Kaphaja* patients having *Madhyama- Sara-Samhanana- Satwa- Satmya- Pramana-Vyayama Shakti and Pravara Ahara Shakti* were manifested with *Paittik Vikara* patients.

(Table No- 06)- The drugs of *Kakolyadigana Hima* were the predominance of *Madhura* (sweet), *Tikta*, (bitter) *Kashaya Rasa* (astringent) and *Sita Virya* with *Madhura Vipaka*. *Madhura rasa* suppress hyper activity (*Teekshna guna*) of vitiated pitta whereas *Tikta & Kasaya rasa* absorbs liquid form (*Drava guna*) of vitiated pitta⁸. *Ushna Virya* (hot) where *sheeta Virya* is opposite to *Ushna* and *Teekshna guna of pitta* hence it helps in pacify the aggravated *pitta*. *Hima kalpana* is also a *Shita kalpana* which has opposite character of *Pitta doshsa*. So this mode of application of drug also suppresses the vitiated *Pitta doshsa* and diseases related with the aggravated pitta⁹.

CONCLUSION

Sanchaya and Prakopa (aggravation) of *doshas* occur in our body according to *Ritu* and get subsided accordingly in presiding *Ritu*. If someone take the support of medicine in *Prakopa* (aggravation) stage of *dosha* in particular *ritu* (season) then it gets cured in that *ritu* itself. So in this research study *Kakolyadigana drugs in Hima form* had been chosen for 10 days for *pitta samana in Sharata ritu as pitta Prakopa* (aggravation) takes place in *Sharata ritu* (autumn). Finally, it can be said that the formulation i.e. ***Kakolyadigana drugs in Hima form*** could be the best means for management of *Pitta vikara in Sharata ritu*. Results of this work have undoubtedly established the efficacy of trial drug. Forth coming researchers may pursue further study in a large sample size over a period of longer duration. No side effect was noticed during clinical trial.

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