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Research Article

Immunity in Children

A Comparative Clinical Study to Evaluate the Efficacy of Madhukadi Ghrita and Samangadi Leha in enhancing Vyadhikshamatva w.s.r. to Immunity in Children

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Background: Despite tremendous progress in recent decades, infectious diseases remain a leading cause of morbidity and mortality in pediatric population worldwide. Optimal immune health directly depends upon Hitakara Aahar and Vihar. Maintaining a diet and lifestyle aligned with one's Satmya help strengthening the defense mechanism of the body. Equilibrium of Doshas, Bala and Ojas capable of effectively combating disease. Strengthening the immune system in a natural way there are many formulations like Rasayana, Balya and Ojovridhikara drugs.

Aims and Objective: To evaluate, compare the efficacy and clinical safety of Madhukadi Ghrita and Samangadi Leha in children.

Materials and Methods: A randomized, comparative clinical trial was conducted on 40 pediatric patients belonging to age group 2-10 years for 4 weeks who were suffering from recurrent RTI and GIT infections. The patients were divided into two groups: Group I received Madhukadi Ghrita, while Group II was treated with Samangadi Leha. The clinical efficacy of both interventions was assessed based on subjective and objective criteria, symptomatic relief and overall improvement.

Results: Both groups significantly improved clinical symptoms. Madhukadi Ghrita is preferable for immediate symptom alleviation, whereas Samangadi Leha is beneficial for long-term immune system support.

Conclusion: This study seeks to provide safe and effective Ayurvedic alternatives for enhancing Vyadhikshamatva (immunity) in children, fostering long-term immune resilience and overall well-being.

Keywords: Vyadhikshamatva, Balya, Immunity, Madhukadi Ghrita, Samangadi Leha

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Introduction

Globally, infectious diseases, including pneumonia, diarrhoea and malaria, remain a leading cause of under-five deaths, along with preterm birth and intra-partum related complications.[1]

Frequent, prolonged, or severe infections indicate immunodeficiency. Recurrent respiratory and gastrointestinal infections are common in children, ranging from mild to severe conditions. Factors like an immature immune system, environmental exposures, and nutritional deficiencies contribute to their high prevalence.

Immunity refers to the body's ability to resist or defend against harmful foreign substances such as bacteria, viruses and other pathogenic agents. The inherent defence mechanisms that are present in an individual even before first exposure to pathogen are known as innate or natural immunity.[2]

The concept of strong immune system is thought to be a result of well functioning bodily systems and the presence of balanced state of three *Doshas* (*Vata*, *Pitta* and *Kapha*). The key principles of immunity include *Aahar*, *Lehana*, *Dinacharya*, *Ritucharya*, *Yogasana*, *Pranayam* and *Medhya Rasayana.* Maintaining a diet and lifestyle aligned with one's *Satmya* help strengthen the natural defense mechanism of the body. This alignment ensures that the body is well nourished, balanced and capable of effectively combating disease.[3]

Immunomodulatory drugs are classified into categories such as *Rasayana*, *Balya* and *Ojovridhikara*.[4]

Many plant-based compounds with potential immunotherapeutic effects have been discovered, validating their use in traditional medicine and paving the way for future research. The ingredients of these selected formulations form a distinctive blend possessing *Balya* (strengthening), *Medhya* (intellect-enhancing) and *Rasayana* (rejuvenating) properties.[5]

Considering the aforementioned factors and aiming to relieve children from restlessness, exasperation and discomfort, a dedicated effort has been made in the present study titled "A Comparative Clinical Study to Evaluate the Efficacy of *Madhukadi Ghrita* and *Samangadi Leha* in enhancing *Vyadhikshamatva* w.s.r. to Immunity in Children."

Aim and Objectives

1. To study the efficacy of *Madhukadi Ghrita* and *Samangadi Leha* on *Vyadhikshamatva* in children.
2. To compare the efficacy of *Madhukadi Ghrita* and *Samangadi Leha*.
3. To evaluate the clinical safety of *Madhukadi Ghrita* and *Samangadi Leha* in children.

Materials and Methods

Total 40 patients were registered from the *Kaumarbhritya-Balroga* OPD/IPD, RGGPG Ayurvedic College and Hospital, Paprola, randomly fulfilling the criteria of this study.

A case proforma was filled with the data obtained by interrogation, physical examination and collection of details of each child.

Inclusion Criteria

1. Patient between 2 to 10 years of Age.
2. Patient suffering from recurrent GIT and RTIs.
3. Patient /Parents willing to participate in the trial.

Exclusion Criteria

1. Patient below 2 years of age and above 10 years.
2. Patients with congenital, hereditary or acute systemic illness (Jaundice, Hypothyroidism, Renal impairments and Electrolyte imbalance).
3. Patient with physical disability.

Grouping of Patients

In the present research work, a total of 40 patients were registered and studied under two groups.

Group-I

20 patients in this group were managed with *Madhukadi Ghrita.*

- **Route of Administration:** Oral
- **Dosage:** 0.5ml/kg/day in two divided doses.
- ***Anupana*:** Lukewarm Milk.

Group-II

In this group 20 patients were given the trial drug *Samangadi Leha.*

- **Route of Administration:** Oral
- **Dosage:** 500mg/kg/day in two divided doses.
- ***Anupana*:** Lukewarm Milk.

Duration of the trial: 4 weeks

Follow-up: 2nd, 4th week and subsequent follow ups on 8th, 12th week

Criteria of Assessment of Results

The assessment of the effect of trial drugs was done based on the subjective and objective criteria. All the patients were examined before initiation and after completion of the trial.

The improvement was assessed based on relief in severity of symptoms and changes in laboratory investigations were also taken into consideration.

Subjective Criteria

All the sign & symptoms depending upon their severity and frequency were graded on 4-point scale i.e., 0,1,2,3. The clinical improvement during and after trial were correlated with the previous grading of sign and symptoms.

Table 1: Grading of sign and symptoms.

Illness		Grade
Temperature	**Severity**	
	Nil	0
	Slight fever and /or some aches	1
	Definite elevation of temperature, moderate aches, headache	2
	Severely incapacitated by general symptoms	3
	Frequency	
	Nil	0
	1 episode in last 3 months	1
	2 episodes in last 3 months	2
	>=3 episodes in last 3 months	3
Running Nose	**Severity**	
	Nil	0
	Mild discharge, stuffiness, sneezing	1
	Heavy, clear discharge and /or stuffiness	2
	Yellow or green nasal discharge	3
	Frequency	
	Nil	0
	1 episode in last 3 months	1
	2 episodes in last 3 months	2
	>=3 episodes in last 3 months	3
Cough	**Severity**	
	No cough	0
	Mild, isolated cough, without additional symptoms	1
	Moderate, paroxysmal cough, without additional symptoms	2
	Severe, strenuous cough, accompanied by chest discomfort	3
	Frequency	
	Nil	0
	1 episode in last 3 months	1
	2 episodes in last 3 months	2
	>=3 episodes in last 3 months	3
Sore Throat	**Severity**	
	Normal	0
	Throat discomfort	1
	Pain in throat with difficulty in swallowing of food	2
	Pain in throat and difficulty in swallowing even saliva	3
	Frequency	
	Nil	0
	1 episode in last 3 months	1
	2 episodes in last 3 months	2
	>=3 episodes in last 3 months	3

Tonsils	**Severity**	
	Normal	0
	Enlarged without inflammation	1
	Enlarged with inflammation	2
	Yellowish spot on tonsils	3
	Frequency	
	Nil	0
	1 episode in last 3 months	1
	2 episodes in last 3 months	2
	>=3 episodes in last 3 months	3
Pain Abdomen	**Severity**	
	No pain	0
	Mild pain (Nagging, annoying, interfering little with ADLs)	1
	Moderate pain (interferes significantly with ADLs)	2
	Severe pain (Disabling, Unable to perform ADLs)	3
	Frequency	
	Nil	0
	1 episode in last 3 months	1
	2 episodes in last 3 months	2
	3 episodes in last 3 months	3
Vomiting	**Severity**	
	Nil	0
	Forceful ejection of small amount of gastric contents (Milk/Food)	1
	Projectile Vomiting (Large amount of gastric content)	2
	Bilious Vomiting (containing large amount of bile)	3
	Frequency	
	Not any episode	0
	1-2 episodes in last 3 months	1
	3-5 episodes in last 3 months	2
	4-6 or more episodes in last 3 months	3
Loose Stools	**Severity**	
	Nil	0
	2-3 stools above normal per day	1
	4-6 stools above normal per day	2
	>=7 stools above normal per day	3
	Frequency	
	Nil	0
	1 episode in last 3 months	1
	2episodes in last 3 months	2
	3episodes in last 3 months	3

Objective Criteria

- Serum IgG

Laboratory investigations

- CBC (Hb gm%, TLC, DLC)
- ESR
- LFT (SGOT, SGPT)

Statistical Analysis

Data was statistically analyzed by using appropriate tests "Student's paired 't' test" for individual group and "Unpaired 't' test" for intergroup comparison were used for parametric data.

For non-parametric data "Wilcoxon Signed Rank Sum test" was used for ind. group & "Mann Whitney 'U' test" was used for intergroup comparison.

The obtained results were interpreted as follows:

- Highly significant $p<0.001$
- Significant $p<0.05$
- Insignificant $p>0.05$

Assessment of Results

Marked improvement	75% - 100% relief
Moderate improvement	51% - 74% relief
Mild improvement	25% - 50% relief
No improvement	<25% relief

Results were assessed based on the overall effect of the trial drugs on subjective as well as objective parameters and categorized as;

Results

Table 2: Therapy effect on subjective parameters depending upon their severity (before and after treatment)

Signs and symptoms	Groups	Mean		d	% Relief	SD±	SE±	W value	p value
		BT	AT						
Fever	Group I	1	0.2	0.8	80%	0.696	0.156	-91	<0.001
	Group II	0.8	0.1	0.7	87.5%	0.801	0.179	-55	0.002
Running Nose	Group I	0.35	0.1	0.25	71.42%	0.550	0.123	-10	0.125
	Group II	0.6	0.05	0.55	91.66%	0.825	0.184	-28	0.016
Cough	Group I	0.6	0.2	0.4	66.66%	0.598	0.134	-28	0.016
	Group II	1.5	0.35	1.1	73.33%	0.788	0.176	-136	<0.001
Sore Throat	Group I	0.65	0.15	0.5	76.92%	0.688	0.154	-36	0.008
	Group II	0.5	0	0.5	100%	0.606	0.135	-45	0.004
Tonsils	Group I	0.35	0.1	0.25	71.42%	0.444	0.099	-15	0.063
	Group II	0.7	0.5	0.2	28.57%	0.410	0.091	-10	0.125
Pain Abdomen	Group I	1.35	0.5	0.85	62.96%	0.587	0.131	-120	<0.001
	Group II	0.5	0.15	0.35	70%	0.489	0.109	-28	0.016
Vomiting	Group I	0.55	0	0.55	100%	0.686	0.153	-45	0.004
	Group II	0.35	0.05	0.3	85.71%	0.470	0.105	-21	0.031
Loose Stools	Group I	0.5	0.05	0.45	90%	0.604	0.135	-36	0.008
	Group II	0.15	0	0.15	100%	0.366	0.081	-6	0.250

Table 3: Therapy effect on subjective parameters depending upon their frequency (before and after treatment)

Signs and symptoms	Groups	Mean		d	% Relief	SD±	SE±	W value	p value
		BT	AT						
Fever	Group I	0.9	0.15	0.75	83.33%	0.64	0142	-91	<0.001
	Group II	0.7	0.15	0.55	78.57%	0.686	0.153	-45	0.004
Running Nose	Group I	0.4	0.15	0.25	62.5%	0.444	0.099	-15	0.125
	Group II	0.55	0.1	0.45	81.81%	0.686	0.153	-28	0.016
Cough	Group I	0.75	0.2	0.55	73.33%	0.76	0.169	-36	0.008
	Group II	1.45	0.6	0.85	58.62%	0.587	0.131	-120	<0.001
Sore Throat	Group I	0.7	0.15	0.55	78.57%	0.83	0.184	-36	0.008
	Group II	0.7	0.25	0.45	64.28%	0.510	0.114	-45	0.004
Tonsils	Group I	0.45	0.15	0.3	66.66%	0.571	0.127	-15	0.063
	Group II	1	0.5	0.5	50%	0.688	0.153	-36	0.008
Pain Abdomen	Group I	1.4	0.6	0.8	57.14%	0.523	0.116	-120	<0.001
	Group II	0.7	0.35	0.35	50%	0.489	0.109	-28	0.016
Vomiting	Group I	0.5	0	0.5	100%	0.606	0.136	-45	0.004
	Group II	0.35	0.05	0.3	85.71%	0.759	0.169	-21	0.031
Loose Stools	Group I	0.6	0.2	0.4	66.66%	0.598	0.133	-28	0.016
	Group II	0.25	0	0.25	100%	0.638	0.142	-6	0.250

Table 4: Inter-group comparison of subjective parameters

Morbidity Features	Mean diff. (BT-AT)			Diff. in % Relief	Mann Whitney Rank	p value
		Group I	Group II			
Fever	Severity	0.8	0.7	-7.5%	429	0.616
	Frequency	0.75	0.55	4.73%	446	0.336
Running Nose	Severity	0.25	0.55	-20.24%	375	0.355
	Frequency	0.25	0.45	-19.31%	385	0.506
Cough	Severity	0.4	1.1	-6.67%	313	0.009
	Frequency	0.55	0.85	14.71%	354	0.136
Sore Throat	Severity	0.5	0.5	-23.08%	405	0.903
	Frequency	0.55	0.45	14.29%	409	0.989

Tonsils	Severity	0.25	0.2	42.85%	420	0.796
	Frequency	0.3	0.5	16.66%	379	0.408
Pain Abdomen	Severity	0.85	0.35	-7.04%	497	0.019
	Frequency	0.8	0.35	7.14%	493	0.024
Vomiting	Severity	0.55	0.3	14.29%	446	0.335
	Frequency	0.5	0.3	14.29%	443	0.378
Loose Stools	Severity	0.45	0.15	-10%	461	0.166
	Frequency	0.4	0.25	-40%	444.5	0.355

Table 5: Effect of therapy on objective criteria (Difference observed before and after treatment)

Investigation	Groups	Mean		d	% change	SD±	SE±	't' value	p value
		BT	AT						
IgG	Group I	10.65	10.71	-0.06	-0.56%	0.521	0.116	-0.519	0.610
	Group II	9.797	10.58	-0.783	-7.99%	1.006	0.224	-3.480	0.003

Table 6: Intergroup comparison of objective criteria

Investigation	Mean diff (BT-AT)		Diff. in % Relief	't'value	p value
	Group I	Group II			
IgG	-0.06	-0.783	13.05%	2.852	0.007

Table 7: Effect of therapy on laboratory parameters

Investigation	Groups	Mean		d	% change	SD±	SE±	't'value	p value
		BT	AT						
Hb	Group I	12.84	13.135	-0.295	-2.297	0.787	0.176	-1.676	0.110
	Group II	12.465	12.515	-0.05	-0.401	1.02	2.24	0.218	0.830
TLC	Group I	6.396	5.788	0.608	9.505	1.996	0.446	1.363	0.189
	Group II	7.773	6.264	1.51	19.43	2.605	0.582	2.593	0.018
NEU	Group I	58.76	54.25	4.51	7.675	13.4	2.996	1.505	0.149
	Group II	62.285	54.29	7.995	12.84	9.776	2.186	3.657	0.002
LYM	Group I	33.46	31.57	1.89	5.648	13.519	3.023	0.625	0.539
	Group II	31.33	33.895	-2.565	-8.187	8.234	1.841	1.393	0.180
MID	Group I	5.145	5.33	-0.185	-3.595	1.723	0.385	-0.480	0.637
	Group II	5.32	5.705	-0.385	-7.236	1.97	0.441	-0.874	0.393
ESR	Group I	11.1	8.35	2.75	24.77	8.245	1.844	1.492	0.415
	Group II	11.7	11.9	-0.2	-1.709	8.089	1.809	-0.111	0.913
SGOT	Group I	25.9	27.4	-1.5	-5.791	8.043	1.798	-0.834	0.415
	Group II	34.2	28.1	6.1	17.84	17.072	3.817	1.598	0.127
SGPT	Group I	18.9	22.35	-3.45	-18.25	10.865	2.43	-1.420	0.172
	Group II	25.2	20.65	4.55	18.06	20.786	4.648	0.979	0.340

Table 8: Intergroup comparison of laboratory parameters

Investigations	Mean diff. (BT-AT)		Diff. in % Relief	't'value	p value
	Group I	Group II			
Hb	-0.295	-0.05	-1.896%	-0.847	0.402
TLC	0.608	1.51	-9.925%	-1.229	0.227
NEU	4.51	7.995	-5.165%	-0.940	0.353
LYM	1.89	-2.565	13.84%	1.259	0.216
MID	-0.185	-0.385	3.641%	0.342	0.734
ESR	2.75	-0.2	26.48%	1.142	0.261
SGOT	-1.5	6.1	-23.63%	-1.801	0.080
SGPT	-3.45	4.55	-36.31%	-1.525	0.135

Discussion

Subjective Parameters

Group I (*Madhukadi Ghrita*) showed a highly significant improvement in fever, abdominal pain (severity) and the frequency of fever and cough.

Significant improvements were also observed in the severity of cough, sore throat, vomiting and loose stools, as well as in the frequency of abdominal pain, sore throat and tonsillitis. However, the results were insignificant for the severity of running nose and tonsillitis, as well as the frequency of running nose and loose stools.

Group II (*Samangadi Leha*) showed a highly significant improvement in cough (both in severity and frequency). Other morbidity features showed significant results, while the changes in tonsils, loose stool severity, and frequency of a running nose were not statistically significant.

In the intergroup comparison, a statistically significant difference was observed in cough relief (severity) and pain abdomen (severity and frequency). Group II demonstrated superior results for cough relief, while Group I showed better outcomes for pain abdomen. Other subjective parameters in intergroup comparison showed insignificant result between the two Groups.

Objective Parameters

Group I showed minimal impact on IgG levels, whereas Group II exhibited a statistically significant increase, indicating stronger immunomodulatory effects. Intergroup analysis revealed a significant difference ($p < 0.05$), confirming the superior efficacy of Group II in enhancing IgG levels.

Group II showed a significant reduction in TLC and neutrophil levels, while changes in hemoglobin, lymphocytes, MID counts, ESR, and liver enzymes (SGOT, SGPT) were not statistically significant in either group. Intergroup comparison revealed no significant differences in any parameter, indicating a similar impact in both groups.

Probable mode of action of the trial drugs-

1. Madhukadi Ghrita

Table 9: Pharmacological actions

Ingredients	Karma	Action based on pharmacological studies
Madhuka	Balya, Vatapittajita, Swarya	Anti-tussive, Anti-inflammatory, Anti-microbial, Hepatoprotective, Immunomodulatory
Vacha	Kanthya, Deepani, Vatahara, Kaphahara, Agnivardhaka	Anti- inflammatory, Anti-bacterial, Broncho-dilation, Immunomodulatory, Neurologic effect
Pippali	Kaphavatashamaka, Deepana, Ruchya, Kasahara, Rasayana, Balya	Anti-microbial, effect on Respiratory System, Immunomodulatory, Anti-tumor, Hepatoprotective
Chitraka	Deepana, Pachana, Grahi, Kanthya, Jwaraghna, Rasayana	Anti-inflammatory, Antimicrobial, Antioxidant,Nephroprotective, Hepatoprotective
Haritki	Deepana, Pachana, Anulomana, Grahi, Kaphaghna, Srotah-shodhana, Rasayana	Anti- inflammatory, Anti-bacterial, Antidiarrheal, Immunomodulatory, Hepatoprotective
Bibhitaki	Vedanasthapana, Deepana, Anulomana, Grahi, Chhardinigrahana, Kaphaghna, Jwaraghna	Antipyretic, Antibacterial, Antidiarrheal, Analgesic, Immunomodulatory, Hepatoprotective
Amalaki	Balya, Deepana, Anulomana, Stambhana, Kaphaghna, Jwaraghna, Rasayana	Antipyretic, Analgesic, Anti-bacterial, Antioxidant,Immunomodulatory, Hepatoprotective
Go Ghrita	Agnideepana, Balya, Ojovardhaka, Rasayana, Ruchya, Vatapittaprashamna, Vayasthapana,	Anti- inflammatory, effect on GIT, Anti-cancer, Antihyperlipidemic

Table 10: Therapeutic indication

SN	Therapeutic Indication	Drug ingredients	Improvement in Clinical Features
1.	Jwaraghna	Madhuka, Chitraka, Haritaki, Bibhitaki, Amalaki	Fever
2.	Pratishyaya	Haritaki, Bibhitaki	Running Nose
3.	Kasaghna	Madhuka, Vacha, Pippali, Haritaki, Bibhitaki, Amalaki	Cough
4.	Dahashamaka	Madhuka, Amalaki	Sore Throat
5.	Shothhara	Pippali, Chitraka, Haritaki, Bibhitaki,	Sore Throat
6.	Udarashoola	Pippali, Chitraka, Haritaki, Amalaki	Pain Abdomen
7.	Chardighna	Madhuka, Bibhitaki	Vomiting
8.	Atisaraghna	Madhuka, Bibhitaki	Loose stools
9.	Deepana-Pachana	Vacha, Pippali (Deepana), Chitraka, Haritaki	Fever, Pain Abdomen
10.	Rasayana	Pippali, Chitraka, Haritaki, Amalaki, Go Ghrita	Immunomodulatory & strengthening
11.	Balya	Madhuka, Pippali, Amalaki, Go Ghrita	Immunomodulatory & strengthening

2. Samangadi Leha

Table 11: Pharmacological actions

Ingredients	Karma	Action based on pharmacological studies
Samanga	Shothahara, Atisaraghna	Anti-microbial, Anti-inflammatory & analgesic, Anti-diarrheal Immunomodulatory Hepatoprotective

Haritaki	Deepana, Pachana, Anulomana, Grahi, Kaphaghna, Srotah-Shodhana, Rasayana	Anti- inflammatory, Anti-bacterial, Antidiarrheal, Immunomodulatory, Hepatoprotective
Bibhitaki	Vedanasthapana, Deepana, Anulomana, Grahi, Chhardinigrahana, Kaphaghna, Jwaraghna	Antipyretic, Antibacterial, Antidiarrheal, Analgesic, Immunomodulatory, Hepatoprotective
Amalaki	Balya, Deepana, Anulomana, Stambhana, Kaphaghna, Jwaraghna, Rasayana	Antipyretic, Analgesic, Anti-bacterial, Antioxidant,Immunomodulatory, Hepatoprotective
Brahmi	Deepana, Pachana, Vedanasthapana, Shothahara	Anti- inflammatory, Anti-Asthmatic, Immunostimulatory, Gastroprotective, Hepatoprotective
Bala	Rasayana, Kasahara, Vedanahara	Anti- inflammatory Antibacterial, Analgesic, Immunomodulatory, Hepatoprotective
Atibalala	Rasayana, Kasahara, Vedanahara	Analgesic, Antidiarrheal, Wound healing, Immunomodulatory, Hepatoprotective
Chitraka	Deepana, Pachana, Grahi, Kanthya, Jwaraghna, Rasayana	Anti-inflammatory, Antimicrobial, Antioxidant,Nephroprotective, Hepatoprotective
Madhu	Agni Deepaka, Balya, Lekhaniya, Shodhana, Tridoshaprashamana	Anti-bacterial, Anti-oxidant property, source of Dietary fiber, Vit C, Vit.B6
Go Ghrita	Agnideepana, Balya, Ojovardhaka, Rasayana, Ruchya, Vatapittaprashamna, Vayasthapana	Anti- inflammatory, effect on GIT, Anti-cancer, Antihyperlipidemic

Table 12: Therapeutic indication

SN	Therapeutic Indication	Drug ingredients	Improvement in Clinical Features
1.	Jwaraghna	Brahmi, Chitraka, Haritaki, Bibhitaki, Amalaki	Fever
2.	Pratishyaya	Haritaki, Bibhitaki	Running Nose
3.	Kasaghna	Haritaki, Bibhitaki, Amalaki, Brahmi, Bala, Atibala	Cough
4.	Dahashamaka	Amalaki	Sore Throat
5.	Shothhara /Vedanahara	Chitraka, Haritaki, Bibhitaki, Brahmi, Bala, Atibala	Sore Throat
6.	Udarashoola	Chitraka, Haritaki, Amalaki	Pain Abdomen
7.	Chardighna	Bibhitaki	Vomiting
8.	Atisaraghna	Bibhitaki, Bala, Atibala	Loose stools
9.	Deepana-Pachana	Haritaki, Brahmi, Chitraka	Fever, Pain Abdomen
10.	Rasayana	Haritaki, Amalaki, Bala, Atibala, Chitraka, Go Ghrita	Immunomodulatory & strengthening
11.	Balya	Madhu, Amalaki, Go Ghrita	Immunomodulatory & strengthening

Madhukadi Ghrita predominantly exhibits *Madhura Rasa, Sheeta Veerya, Snigdha* and *Guru Guna,* and *Madhura Vipaka*, making it highly nourishing and *Vata-Pitta Shamaka*. Ingredients like *Madhuka*, *Ghrita*, and *Amalaki* contribute to its immune-strengthening and rejuvenating effects, while *Pippali*, *Vacha*, and *Chitraka* support digestion and metabolism through their *Katu Rasa* and *Teekshana Guna*.

Most of the drugs in *Samangadi Leha* shows a predominance of *Kashaya*, *Tikta*, and *Madhura Rasa*, along with *Laghu*, *Ruksha*, and *Snigdha Guna*, which support detoxification, digestion and nourishment. Its primarily *Sheeta Veerya* helps pacify *Pitta* and control inflammation, while *Madhura Vipaka* promotes *Ojas* and sustains immunity. The formulation is largely *Tridosha Shamaka*, with a specific emphasis on *Kapha-Pitta* pacification, thereby enhancing *Vyadhikshamatva* in children.

Conclusion

Children with weakened immunity are more prone to recurrent infections, particularly of the respiratory and gastrointestinal tracts, leading to compromised health and development.

The concept of *Vyadhikshamatva* in *Ayurveda* emphasizes strengthening the immune response through *Balya* and *Rasayana* interventions. Both formulations showed effectiveness in reducing the frequency and severity of recurrent RTIs and GIT disorders. *Madhukadi Ghrita* (Group I) was more effective in providing rapid symptomatic relief, *Samangadi Leha* (Group II) had statistically significant result in IgG level, indicating stronger immunomodulatory activity and better long-term immune support. The findings suggest that *Samangadi Leha* may be better drug of choice for more sustained enhancement of *Vyadhikshamatva*.

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