



An Observational Study on Immune-related Disorders and Their Treatment Response in Ayurveda- Case Series

K. Pradeep^{1*}, M. Abhilash¹, M. A. Reshma¹ and Bindu K. Viswambaran¹

¹*Department of Physiology /Kriya Sharira, Government Ayurveda Medical College, Tripunithura, India.*

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i37A31999

Editor(s):

(1) Dr. Mohamed Salem Nasr Allah, Weill Cornell Medical College, Qatar.

Reviewers:

(1) Ankur Kumar Tanwar, University of Delhi, India.

(2) Vasundhara Pratapsinh Varute, D. Y. Patil Medical College & Research Sciences, India.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/70808>

Original Research Article

Received 05 May 2021
Accepted 10 July 2021
Published 15 July 2021

ABSTRACT

Immune-related disorders are common health problems in the world. Based on the principal immunologic mechanism they are classified into four types. One of the four types includes immediate hypersensitivity which is an IgE antibody and mast cell-mediated reaction. Ayurvedic treatments have sometimes delivered good results in the treatment of these disorders. This work is a humble effort to streamline Immune-related diseases in the settings of Govt Ayurveda Medical College, Tripunithura, Kerala, India. In this case series study patients with allergic rhinitis and urticaria were selected. Their symptoms and blood parameters were assessed both before and after the Ayurvedic treatment for one month. In both allergic rhinitis and urticaria, there was a significant reduction in the symptoms. In the case of blood investigations, only IgE showed a significant change in allergic rhinitis. Even though Ayurvedic immunology has a strong potential to treat allergic disorders with its pro-nature individualized holistic approach to make significant changes in immune parameters administration of rejuvenators for more than one month is very essential.

Keywords: *Urticaria; allergic rhinitis; immune-related disorders and Ayurveda.*

*Corresponding author: E-mail: drpradeep601@gmail.com;

1. INTRODUCTION

In this COVID -19 epoch, immunity and immune-modulators are the most discussed topics. Immunology is one of the fastest-growing disciplines in Medicine and Biology. Its increased significance is because of the emergence of a wide range of immunological diseases including allergy, autoimmunity, infections, cancer etc. It is interesting to observe that the ancient *Ayurvedic* texts show a vivid description of the foundations of immunology a thousand years ago. *Ayurvedic* immunology is essentially a unique holistic science that has inherent bonds with the genetic constitution, nutritional status, digestive power, ageing process etc. According to *Ayurveda* the entity which is acting as a protecting force behind an individual's health is *Vyadhikshamtva* [1]. It is of two kinds i.e., the one which attenuates the manifested disease and another variety prevents the manifestation of diseases. *Ojas* and *Bala* are the two terminologies that are used to discuss the concept of *Vyadhiksamatwa* and it also depends upon the equilibrium state of Kapha and Udana Vata. The bio-factor *Ojas* is the essence of all the seven *Dhatus* of the body [2]. This *Oja* is otherwise called the *Bala* of the body [3] and it is also considered as the factor that destroys *Dosha* i.e. the disease-causing factors [4,5]. This strength of the body depends on genetic factors, seasonal factors and healthy practices in the form of food and medicines [6]. *Bala* is the basic characteristic of *Prakruta Kapha Dosha* [7] and *vata dosha* [8] and it is the function of *Prakrut Udana Vayu* [9]. There are clear descriptions available in *Samhitas* about the three broad categories of immune disorders, namely *Oja-vyâpat*, *Oja-visramsa*, and *Ojaksaya* [10]. The *Samhitas* also describe *Rasayana Chikitsa* which is one of the eight branches of *Ayurveda* [11]. Taking *Rasayana* is helpful to increase the immunity of the person and to keep him away from opportunistic diseases. The possible mechanisms behind this action of *Rasayana* are nutritive function, immunomodulatory action, antioxidant action, anti-ageing action, neuroprotective action, haemopoietic effect etc.

Although descriptions of *vyadhikshmatwa*, *Ojas*, *bala* etc are available in the literature, it is not enough to meet the needs of changing community. So, it is essential to be evidence-based. Immune-related disorders have

recorded a peak in the last two decades especially in India. Ayurvedic treatments have sometimes delivered good results in the treatment of these disorders. It has also got a wide range of medicines which enhances the immunity of our body. This includes single drugs and *Yogas (Compound medicines)* which mainly includes *Rasayanas*. But, due to a lack of documentation and research works, the benefits of Ayurveda have been denied to a majority of people suffering from immune-related disorders ranging from mild infections to complicated autoimmune disorders. Also, the treatment options in Ayurveda fail to get standardized due to a lack of research works and protocol development. This work is a humble effort to streamline the immune-related practices in the settings of Govt Ayurveda Medical College, Tripunithura, Kerala, India.

This case series study mainly focuses on a few cases of commonly occurring immune-related disorders like urticaria and allergic rhinitis and their treatment response with ayurvedic medicines.

2. MATERIALS AND METHODS

Participants were selected using the diagnostic criteria for allergic rhinitis and urticaria. Ayurvedic treatment was given and their treatment response was assessed after one month using the blood parameters and symptom analysis

2.1 Objectives

- To study the variations in the immune profile by Ayurvedic management
- To study the variations in the response pattern

2.2 Settings

The study was conducted in Govt. Ayurveda Medical College, Tripunithura. Kerala, India.

2.3 Type of Study

Observational study – Case Series
Sample size – 30

2.4 Inclusion Criteria

- Age group 10-70
- Both male and female

- Diagnosed as; Allergic rhinitis and urticaria

2.5 Exclusion Criteria

- Unwilling for follow up
- Multiple illnesses and on other medications

2.6 Assessment

Assessment is done before treatment and after treatment (after four weeks).

2.7 Data Analysis

Statistical analysis was done using SPSS and EXCEL software, Descriptive statistics, Wilcoxon signed-rank test and paired t-test was done.

3. RESULTS

3.1 Allergic Rhinitis

In allergic rhinitis, 42.9% were male patients and 57.1% were female patients.

Table 1. Diagnostic criteria

	Allergic rhinitis	Urticaria
1	Running nose	Wheals
2	Sneezing	Itching
3	Nasal obstruction	
4	Itching	
5	Headache	
6	Loss of smell	
7	Watering of eyes	
8	Dyspnea	
9	Cough	

Table 2. Blood investigations

Investigations	Allergic rhinitis	Urticaria
CBC	✓	✓
ESR	✓	✓
AEC	✓	✓
IgE	✓	✓
LFT		✓

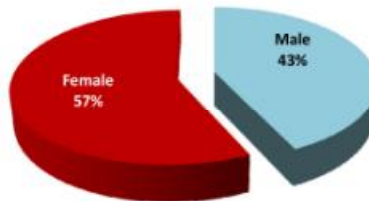


Fig. 1. Distribution of sex



Fig. 2. Prakriti and allergic rhinitis

Table 3. Symptom analysis

	Running Nose	Sneezing	Nasal Obstruction	Nasal Itching	Headache	Diminished smell	Watering of Eye	Dyspnea	Cough
Z	AT-BT -3.111 ^b	AT-BT -3.305 ^b	AT-BT -2.558 ^b	AT-BT -2.859 ^b	AT-BT -3.071 ^b	AT-BT -1.890 ^b	AT-BT -2.850 ^b	AT-BT -1.633 ^b	AT-BT -1.633 ^b
Asymp. Sig. (2-tailed)	0.002	0.001	0.011	0.004	0.002	0.059	0.004	0.102	0.102

When the symptoms of allergic rhinitis were analyzed both before and after treatment using.

Wilcoxon signed the ranked test, it was found to be statistically significant.

3.1.1 Blood investigations – analysis

When the routine blood investigations were analyzed both before and after the treatment, there was no significance. It may be due to the lesser sample size taken for the study. But statistically significant p-value was obtained in the case of IgE.

3.2 Urticaria

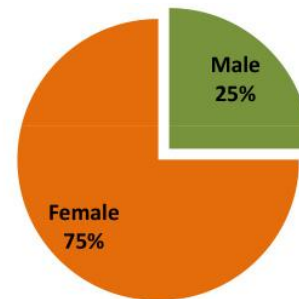


Fig. 3. Distribution of sex

75% of the urticaria patients were females.

Table 4. Haemoglobin and differential count

	Hb AT - BT	TC AT - BT	N AT - BT	L AT - BT	E AT - BT
Z	-1.291b	-0.631c	-1.300b	-1.227c	-0.804b
Asymp. Sig. (2-tailed)	0.197	0.528	0.194	0.22	0.422

Table 5. ESR, Platelet count, Absolute eosinophil count & IgE

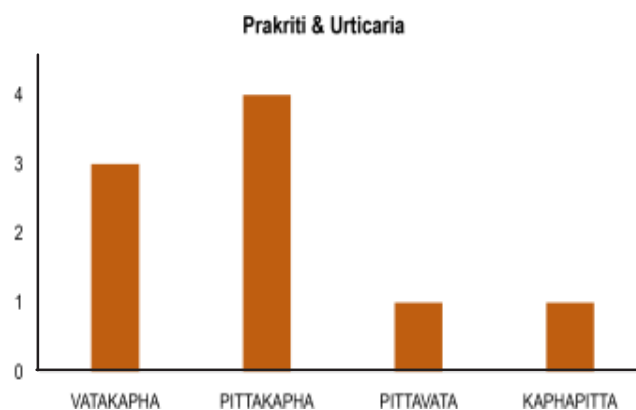
	ESR AT - BT	Platelet AT - BT	AEC AT - BT	IgE AT - BT
Z	-0.734b	-0.318b	-0.974b	-2.605b
Asymp. Sig. (2-tailed)	0.463	0.75	0.33	0.009

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Table 6. Various medicines given in allergic rhinitis

Name of Medicines	
1.	Dasamoolakatutrayam kashayam
2.	Pathyashadamgam kashayam
3.	Amrutotharam kashayam
4.	Pachanamrutam kashayam
5.	Panchatikthakam kashayam
6.	Guluchyadi kashayam
7.	Varanadi kashayam
8.	Padolakatu rohinayadi kashayam
9.	Gandharvahastadi kashayam
10.	Indukantham kashayam
11.	Rajanyadi churnam
12.	Haridra- khandam
13.	Vaiswanaram churnam
14.	Avipatty churnam
15.	Thaleesapatradi churnam
16.	Amrutaarishtam
17.	Vasarishtam
18.	Draksharishtam
19.	Abhayarishtam
20.	Dhanwantaram gulika
21.	Dooshivishari Gulika
22.	Vilwadi gulika
23.	Sudarshanam gulika
24.	Kanchanara Guggulu
25.	Anu tailam
26.	Rasnadi churnam

**Fig. 4. Prakriti and urticaria****Table 7. Symptom analysis**

	Wheals AT – BT	Pruritis AT - BT
Z	-3.111b	-3.095b
Asymp. Sig. (2-tailed)	0.002	0.002

When the symptoms were analysed both before and after treatment it was found that the p-value is <0.05 which shows that the results were statistically significant.

4. BLOOD INVESTIGATIONS – ANALYSIS

Table 8. Blood routine

	Hb AT - BT	TC AT - BT	N AT - BT	L AT - BT	E AT - BT	ESR AT - BT	Platelet AT - BT	AEC AT - BT
Z	-0.890 ^b	-1.413 ^b	-0.982 ^b	-0.446 ^c	-1.349 ^c	-1.224 ^c	-1.736 ^c	-0.628 ^c
Asymp. Sig. (2-tailed)	0.373	0.158	0.326	0.656	0.177	0.221	0.083	0.53

In blood routine investigations platelet count showed statistically significant change, but other blood parameters were not significant.

Table 9. IgE test results

	IgE (AT-BT)
Z	-1.472 ^b
Asymp. Sig. (2-tailed)	0.141

IgE was not statistically significant.

Table 10. Liver function test results

	SGOT	SGPT	ALP	Total Bilirubin	Direct Bilirubin	Total Protein	Albumin	Globulin
Z	AT-BT -0.280 ^b	AT-BT -0.350 ^c	AT-BT -1.428 ^c	AT-BT -1.620 ^b	AT-BT -0.000 ^d	AT-BT -1.027 ^b	AT-BT -2.238 ^c	AT-BT -1.692 ^b
Asymp. Sig. (2-tailed)	0.779	0.726	0.153	0.105	1	0.304	0.025	0.091

In Liver function tests no significant results were observed, but Albumin and globulin showed statistically significant change.

Table 11. Various medicines given in Urticaria

Name of Medicines	
1.	Amritarajanyadi kashayam
2.	Guluchyadi kashayam
3.	Punarnavadi kashayam
4.	Haridra- khandam
5.	Lohasavam
6.	Avipatti chumam
7.	Asta chumam
8.	Aragwada Mahatiktaka ghrtam
9.	Mahatiktaka ghrtam ointment
10.	Pinda tailam
11.	Nalpamaradi keram

5. DISCUSSION

Immunity, as we understand it through modern science, is the function of certain cells, enzymes and immunomodulatory chemicals that attack pathogens and prevent them from creating diseases. The concept of immunity is explained in Ayurveda under multiple topics. The most important ones are Vyadhikshamathwa, Ojas and Bala. In Ayurveda Ojo Visramsa, Ojo Vyapat and Oja Kshaya are explained as disorders that are caused by the vitiation of Ojas. Some diseases like Prameha, Pandu, Rajayakshma etc are also explained concerning Ojas. In modern science disorders of the immune system include allergic diseases, autoimmune disorders, immune deficiency disorders, cancers etc.

In the present study most commonly occurring diseases like allergic rhinitis and urticaria, was included. Relation of these diseases with immunity is not directly available in Ayurvedic literature. According to modern science allergic rhinitis, and urticaria comes under immune-related disorders.

Ayurvedic treatment given sensibly can certainly relieve the patient from the problem of Allergic rhinitis. All the oral medicines played a positive effect on the digestive and metabolic process as well, thereby improving the systems biology. Thus, nourishing the mucosa of the upper respiratory tract improving the immune system by oral medication and altering the quality of blood comprehensively giving such desired outcomes in Allergic rhinitis.

Most of the symptoms of Allergic Rhinitis correspond to Vataja Pratishyaya [12]. But the frequent attacks of symptoms and unexpected disappearance of these either mature or immature hints its inclusion in Sannipaataja Pratishyaya which is also the case with Allergic Rhinitis. So, we can select drugs by considering the Dosh predominance and the treatment should be given accordingly.

As per Ayurveda, Urticaria can be considered as Sheethapitta, Udarda and Kotha [13].

Treatment for Sheethapitta pitta according to Ayurveda includes both Shodhana and Shamana chikitsa. Acharya has suggested that treatment can be done as of Kushtha, Amlapitta etc. Various Aushadha yogas are mentioned for Udarda, Kotha which also can be used for Sheethapitta. The main advantage of Ayurvedic

treatment is that it helps to stop the recurrence of Sheethapitta (Urticaria) with the correct use of Shodhana, Shamana Chikitsa and Pathyapathya. When we consider these diseases mostly it is Kapha and Vata predominant, but in some cases, there will be Pitta Dosh involvement too. So, the treatment given here is by assessing the Dosh involvement.

There are three unique characteristic features of Ayurvedic medicine. These three features have now emerged as most relevant today because of the changing paradigms of health- care systems and new knowledge- base. These features are 1. The pro-nature approach, 2. The holistic approach and 3. The personalized health care strategy based on its fundamental concept of constitution and pathological manifestation (Prakriti- Vikriti). Both constitution and pathological manifestation are largely genetically determined processes and are to be tackled individually because no two individuals are similar and there should be individualized health care [14].

According to the severity of symptoms, disease duration, family history, age and other adjoining diseases, the severity of involvement of vitiating factors (Dosh), vitiated factors (Dushya) in disease pathology also differs. The choice of both classical and patent medicines differed among physicians according to their views and also according to the condition of the patient. In total the treatment should incorporate holistic and personalized health care strategy and finally the use of immune-enhancing agents like rejuvenators (Rasayana) for more than one month for the non-recurrence of the disease and also for the significant changes in immunological parameters.

6. CONCLUSION

This study showed that Ayurvedic drugs can be effectively used in immune-related disorders. To generate more evidence each disease should be studied individually with more samples. We can see that most of the drugs used here were immune-modulatory and it had helped to improve the symptoms, even though blood parameters were not statistically significant. Few blood parameters showed statistically significant results, few don't, this may be due to the short treatment period. All the diseases were treated by considering the type of *dosha* involvement and considering the *dosha Prakriti* and other factors like *agni*. To make more precise

individual diseases has to be studied by developing a protocol and also the compound drugs have to be considered individually for studying the immuno- modulatory effect. Ayurveda deliberates extensively on positive health measures such as rejuvenation therapy with the help of a range of micro- medicinal nutrients called rejuvenators (*Rasayana*). Even though Ayurvedic immunology has a strong potential to treat allergic disorders with its individualized holistic approach administration of rejuvenators for more than one month is essential to make significant changes in blood parameters.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

FINANCIAL SUPPORT AND SPONSORSHIP

The financial support has been given by Ayush Department, Govt of Kerala, Thiruvananthapuram and Department of Ayurveda Medical Education, Kerala.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Sharma RK, Bhagwan Dash. Agnivesa's Charaka samhitha (text with an English translation and critical exposition based on Chakrapani Datta s Ayurveda Dipika). Reprint edition. Varanasi: Chowkhamba Sanskrit Series Office; Chapter 28, Sutra sthana, vividhaashitapiteeyam Adhyayam. 2014;1:573. (cha su 28/7)
2. Srikantha Murthy KR. Vagbhata's Astanga Hrdayam (text, English translation, notes, appendix and indices). 9th ed. Varanasi: Chowkhamba Krishnadas Academy; Sutrasthana, Chapter 11, Dosadi vijnaniya adhyaya. 2013;1:163. (A H Su 11/37)
3. Srikantha Murthy KR. Susrutha Samhita (text, English translation, notes, appendices and index). Reprint edition, Varanasi: Chaukhambha orientalia; Sutrasthana, Chapter 15, Dosadhatumala ksayavrdhi Vijnaniya. 2014;1:104. (su su 15/19).
4. Sharma RK, Bhagwan Dash. Agnivesa's Charaka samhitha (text with an English translation and critical exposition based on Chakrapani Datta s Ayurveda Dipika). Reprint edition. Varanasi: Chowkhamba Sanskrit Series Office; Chapter 3, Chikitsa sthana, jwara chikitsa. 2013;3:162. (cha su 3/166)
5. Srikantha Murthy KR. Vagbhata's Astanga Hrdayam (text, English translation, notes, appendix and indices). 9th ed. Varanasi: Chowkhamba Krishnadas Academy. Chikitsa sthana, Chapter 1, Jwara chikitsa. 2013;2:190. (A H chi 1/95)
6. Srikantha Murthy KR. Vagbhata's Astanga Hrdayam (text, English translation, notes, appendix and indices). 9th ed. Varanasi: Chowkhamba Krishnadas Academy. Sarira sthana, Chapter 3, Angavibhaga sariram. 2013;1:411. (A H Sa 3/77)
7. Sharma RK, Bhagwan Dash. Agnivesa's Charaka samhitha (text with an English translation and critical exposition based on Chakrapani Datta s Ayurveda Dipika). Reprint edition. Varanasi: Chowkhamba Sanskrit Series Office; Chapter 17, Sutrasthana, Kiyanthasiraseeyam. 2014;1:334. (cha su 17/116)
8. Sharma RK, Bhagwan Dash. Agnivesa's Charaka samhitha (text with an English translation and critical exposition based on Chakrapani Datta s Ayurveda Dipika). Reprint edition. Varanasi: Chowkhamba Sanskrit Series Office; Chapter 28, Chikitsa sthana, Vatavyadhi chikitsa. 2013;4:19. (cha chi 28/3)
9. Srikantha Murthy KR. Vagbhata's Astanga Hrdayam (text, English translation, notes, appendix and indices). 9th ed. Varanasi: Chowkhamba Krishnadas Academy. Sutrasthana, Chapter 12, Dosabhedhiya. 2013;1:167. (A H Su 12/5)
10. Srikantha Murthy KR. Susrutha Samhita (text, English translation, notes, appendices and index). Reprint edition. Varanasi: Chaukhambha orientalia. Sutrasthana, Chapter 15, Dosadhatumala ksayavrdhi vijnaniya. 2014;1:105. (su su 15/24)
11. Srikantha Murthy KR. Vagbhata's Astanga Hrdayam (text, English

- translation, notes, appendix and indices).
9th ed. Varanasi: Chowkhamba
Krishnadas Academy. Sutra sthana,
Chapter 1, Ayushkamiya adhyaya. 2013;
1:5. (A H Su 1/5)
12. Sushruta, Sutra Sthan, 1/7/2., Sushruta
Samhita Dalhana Commentary
Nibandhasangraha, Gayadasacharya
commentaryNyayachandrika Panjika on
Nidanasthana, Ed. By Vd. Jadavaji
13. Trikamji Acharya & Narayana Ram
Acharya, Chaukhamba Surbharti
Prakashana, Varanasi; 2008.
13. Madhava Nidana - Hindi Translation by
Narendranath Shastri, Motilal
banarasidas Pratisthana, Delhi, Chapter
57, verse 1, 638.
14. Ram H Singh. Foundations of immunology
in ayurvedic classics. Indian Journal of the
History of Science. 2015;83-94.

© 2021 Pradeep et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/70808>