

Original Research

The Concept of Neurogenic Switching of Allergy in the Course of Treatment: An Experience from Bakson's Homoeopathy

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Abstract

Background and Objective: Allergy is a defensive response of our body's immune system, which presents itself in the form of various manifestations to indicate required intervention. Switching of allergy from its site of manifestations to a distant site within the body is called neurogenic switching concept. The objective of this study was to provide some observation the neurogenic switching concept of allergic manifestations during the course of Bakson's Homoeopathic treatment.

Material and Method: An open-label observational retrospective study was undertaken among 52 patients who sought treatment for allergy at Bakson's Homeopathic Center, South Extension; New Delhi. Case records which were included were of all those cases which were treated at least for six months during the calendar year 2020-2021.

Results: Out of 52 cases, 80% of cases, showed at least one neurogenic switching of allergy within the four systems. Over two-third cases of them had two or more times of switching during or end of the treatment. The switching of allergy commonly found from respiratory system to integumentary system. In majority of the cases switching is observed from integumentary to respiratory system. The calculated p value is much less than 0.001 and 0.039 by Pearson Chi-square and McNemar-Bowker Test respectively, shown the statistical significance of neurogenic switching of allergy during the course of treatment.

Conclusion: This study gives a clue in support of neurogenic switching of allergy with the concept of Allergy treatment at Bakson's Homoeopathy. There is a need to undertake studies with greater sample size and randomized controlled trial to confirm the hypothesis scientifically.

Keywords: Bakson's homoeopathy, Neurogenic switching, Allergy.

Introduction

There is an emerging evidence regarding a rising prevalence of allergic and other immune-mediated diseases in India and other countries in South Asia.¹⁻⁵ Allergy and allergic disorders result from a complex interaction between genetic, environmental, and multiple lifestyle factors; thus India offers an excellent platform to investigate epidemiology and natural course of allergic disorders.¹⁻⁵ Allergy is an immunologically mediated hypersensitivity reaction to a foreign antigen manifested by tissue inflammation and organ dysfunction.⁶ In conventional approach, the popular allergy management is desensitization shots. There are several promising studies in support of a clinically demonstrable activity of homeopathic remedies in respiratory allergies, common upper respiratory tract infections, otorhinolaryngology complaints, and rheumatic diseases.⁷ In a study by Colin *et al.* in 147 cases of respiratory allergies, the success rate of the homeopathic treatment was 87%.⁸ However, in view of longitudinal effect of the treatment, it was desirable to observe the neurogenic switching of allergy over time.

Neurogenic Switching

Neurogenic switching of allergy from one site can lead to manifestations of allergy at a distant site within the body. There is interplay between immunogenic and neurogenic switching of allergy, where substance P can de-granulate the

mast cells and histamine can activate the sensory nerves.⁹

- (A) Chemical irritants (Ch) bind sensory neurons to release neuropeptides including substance P (Sp). An afferent signal travels to the central nervous system (CNS).
- (B) Antigen (Ag) binds IgE molecules on mast cells to release mast cell mediators including histamine (H). Histamine binds to receptors on sensory neurons, and substance P binds to receptors on mast cells.
- (C) Both histamine and substance P can bind effect or cells, such as endothelial cells, mucus-secreting cells, and bronchial smooth muscle cells to produce inflammation.
- (D) Neurogenic switching occurs when an efferent signal from the CNS causes release of neuropeptides at another site, producing inflammation at the second site without local stimulation.⁹

A small percentage of patients suffering with food allergy develop symptoms at other sites, manifesting as asthma¹⁰, rhinitis¹¹ or urticaria.¹² Food hypersensitivity can also manifest as arthritis^{13,14} and migraine.^{15,16} Histamine from gut mast cells could bind to sensory nerves to produce an afferent signal, which could be rerouted via the central nervous system to another site. This neurogenic switching could then explain the diverse manifestations of food allergy.⁹

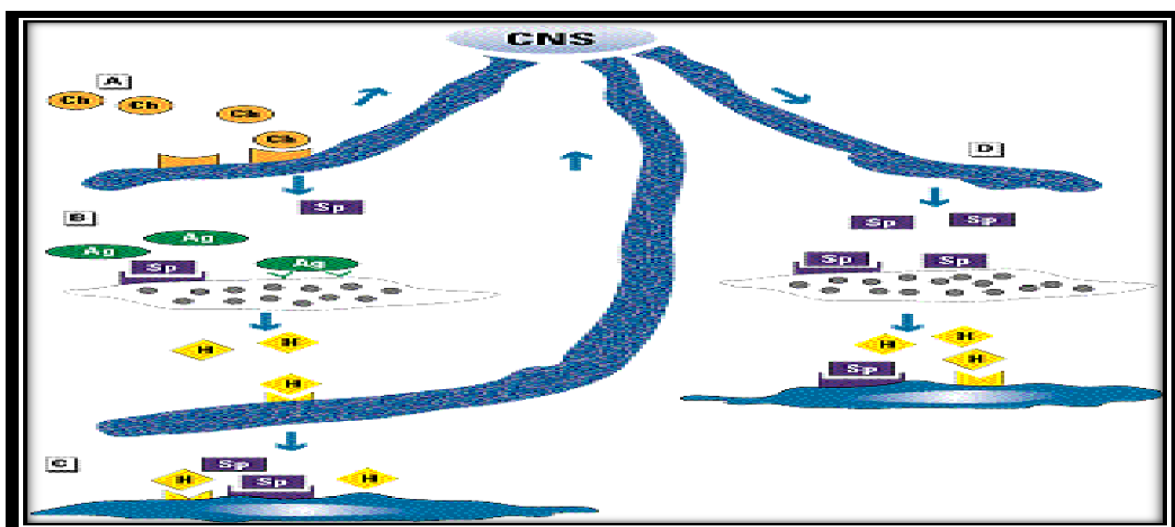


Fig 1 Neurogenic switching⁹

Bakson's Concept of Allergy

As per Bakson Homoeopathy Allergy Management Concept, the allergy often remains in dormant state within the body and once the immunity is hampered the allergic manifestations flare up and shift within the body generally among four systems namely Integumentary, respiratory, gastrointestinal (digestive) and musculoskeletal (Fig.2). The neurogenic switching of allergy among four vulnerable systems maybe observed in different phases of patient's life and may gradually change the genetic make-up and

subsequently make the allergy endogenic, likewise turning the future generations weaker and sensitive to exogenic factors towards allergic manifestation. Hence as per observation of Bakson's Homoeopathy, either during case taking process, the neurogenic switching may be found from past history of the patient or during the course of Homoeopathic treatment the neurogenic switching of appear. The prime focus of this retrospective study was to observe the neurogenic switching of allergic manifestations during treatment in Bakson's Homoeopathy.

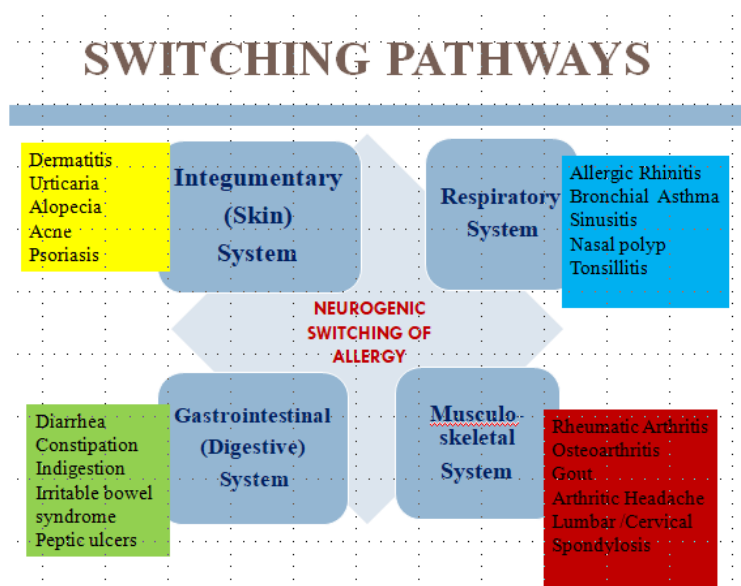


Fig.2 Clinical manifestations of allergy in the switching pathways According to Bakson's concept of allergy treatment by Bakson's Homoeopathy

Hypothesis

Where there is limited symptoms to find indicated homoeopathic medicines (one sided corporeal disease with limited symptoms mentioned by Dr. Hahnemann in Organon of Medicine under chronic disease category Aphorism -181-190),¹⁷ after receiving Homoeopathic medicine(s) based on limited presenting symptoms, the neurogenic switching channels may get activated and allergic manifestation may switch during the course of treatment from one system to another; which is helpful to understand the susceptibility of the patient towards disease as well as helpful to select individualized medicine.

Material and Method

An open-label observational retrospective study was undertaken among 52 patients' case records of Bakson's Homeopathic Center for Allergy, South Extension; New Delhi. Cases were included from the calendar year 2020-21 and treated at least for six months. Homoeopathic medicines were prescribed as per protocol of Bakson's Homoeopathy of allergy management.

We denote four neurogenic systems namely respiratory as R, integumentary as S, gastrointestinal as G and musculoskeletal as M. Cross tabulation of these four neurogenic systems by baseline and first shift, first shift and second shift, and second and third shift. McNemar Chi-

square test has been used to test whether there is marginal homogeneity of two dichotomous variables. It is used for data of the two groups coming from the same participants, i.e., paired data.

Results

At first the visit as presenting complaints, highest allergic affection involving respiratory system followed by involvement of integumentary system was found; whereas during the course of

treatment, the neurogenic switching was observed commonly with the affection of integumentary and gastrointestinal systems. In the beginning of allergy treatment, presenting complaints with respiratory system affection was observed among two-third (35/52) out of 52 patients; while 21.2% (11/52) came with integumentary system affection due to allergy. Musculoskeletal was observed in 4 patients and gastrointestinal system was involved only in 2 patients (Table No.- 1).

Table 1: Number and percentage of cases shifting from one condition (baseline) to another condition

		First shifting				
		R	S	G	M	Total
Baseline	R Count	7	14	10	4	35
	% Within baseline	20.0%	40.0%	28.6%	11.4%	100.0%
	% Within first shifting	53.8%	87.5%	76.9%	40.0%	67.3%
S	Count	4	2	2	3	11
	% Within baseline	36.4%	12.5%	18.2%	27.3%	100.0%
	% Within first shifting	30.8%	0.0%	15.4%	30.0%	21.2%
G	Count	0	0	1	1	2
	% Within baseline	0.0%	0.0%	50.0%	50.0%	100.0%
	% Within first shifting	0.0%	0.0%	7.7%	10.0%	3.8%
M	Count	2	0	0	2	4
	% Within baseline	50.0%	0.0%	0.0%	50.0%	100.0%
	% Within first shifting	15.4%	0.0%	0.0%	20.0%	7.7%
Total	Count	13	16	13	10	52
	% Within baseline	25.0%	30.8%	25.0%	19.2%	100.0%
	% Within first shifting	100.0%	100.0%	100.0%	100.0%	100.0%

*Shifting is significant 0.003 and 0.000 by Pearson Chi-square and McNemar-Bowker Test.

Following treatment, 76.9% patients (40/52) shifted to symptoms other than the baseline and 23.1% (12/52) did not shift from baseline symptom to any other symptom and the shift was statistically. It may be seen that out of 52 patients, 35 patients (67.3%) showed respiratory symptom,

11 (21.2%) showed integumentary symptom, 4 patients (7.7%) showed musculoskeletal symptom while 2 patients (3.8%) showed gastrointestinal symptom at first (baseline) presentation. (Table No.- 2).

Table 2: Number and percentage of cases shifting from the condition at first shift to the condition of second shift

			Second shifting				
			R	S	G	M	Total
first shifting	R	Count	3	1	2	0	6
		% within first shifting	50.0%	16.7%	33.3%	0.0%	100.0%
		% within second shifting	75.0%	6.7%	16.7%	0.0%	11.5%
S	S	Count	0	7	4	3	14
		% within first shifting	0.0%	50.0%	28.6%	21.4%	100.0%
		% within second shifting	0.0%	46.7%	33.3%	33.3%	26.9%
G	G	Count	1	6	2	3	12
		% within first shifting	8.3%	50.0%	16.7%	25.0%	100.0%
		% within second shifting	25.0%	40.0%	16.7%	33.3%	23.1%
M	M	Count	0	1	4	3	8
		% within first shifting	0.0%	12.5%	50.0%	33.3%	100.0%
		% within second shifting	0.0%	6.7%	33.3.0%	0.0%	15.4%
Total		Count	4*	15*	12*	9*	40
		% within first shifting	10.0%	37.5%	30.0%	22.5%	100.0%
		% within second shifting	100.0%	100.0%	100.0%	100.0%	100.0%

*p<0.001 and 0.039 by Pearson Chi-square and McNemar-Bowker Test respectively

Out of 35 patients who had respiratory symptom at the baseline, after treatment, one fifth of the patients continued to possess the same symptom, while 80% (28/35) of the patients shifted to some other system inclusive of 14 patients (40%) who

shifted to integumentary symptom, 10 patients (28.6%) shifted to gastrointestinal symptoms, and 4 patients (11.4%) shifted to musculoskeletal symptom (Table No.- 3).

Table 3: Number and percentage of cases shifting from one condition (second shift) to another condition (third shift)

			Third shifting				
			R	S	G	M	Total
second shifting	R	Count	1	0	0	0	1
		% within second shifting	100.0%	0.0%	0.0%	0.0%	100.0%
		% within third shifting	100.0%	0.0%	0.0%	0.0%	1.9%
S	S	Count	0	6	1	1	8
		% within second shifting	0.0%	75%	12.5%	12.5%	100.0%
		% within third shifting	0.0%	66.7%	100.0%	33.3%	15.4%
G	G	Count	0	1	7	2	10
		% within second shifting	0.0%	10.0%	70.0%	20.0%	100.0%
		% within third shifting	0.0%	11.1%	0.0%	66.7%	19.2%
M	M	Count	0	2	0	4	6
		% within second shifting	0.0%	33.3%	0.0%	66.7%	100.0%
		% within third shifting	0.0%	22.2%	0.0%	0.0%	11.5%
Total		Count	1*	9*	8*	7*	25
		% within second shifting	4.0%	36.0%	32.0%	28.0%	100.0%
		% within third shifting	100.0%	100.0%	100.0%	100.0%	100.0%

Among 11 patients who had integumentary as the system involved as per allergy concept at the baseline, 9 patients shifted to some other symptoms - 4 patients shifted to respiratory symptom, 2 patients shifted to gastrointestinal

symptom and 3 patients shifted to musculoskeletal symptom, against only 2 patients who had no shifting to other symptom from the baseline symptom of integumentary.

Though there were small number of only 2 patients who presented gastrointestinal symptom, one of them shifted to musculoskeletal symptom after the treatment. Similarly, among 4 patients who presented the musculoskeletal symptom at baseline shifted to respiratory symptom.

Further, there were few cases where two or more times switching were observed, say, from respiratory system to integumentary; integumentary to gastrointestinal; and gastrointestinal to musculoskeletal system and vice versa. In majority of cases switching was observed from respiratory system to integumentary. Among 14 patients who had integumentary symptom at first shift, half of them shifted either to gastrointestinal or musculoskeletal as the second shift. Similarly, among 12 patients who had gastrointestinal symptom on the first shift, half of them (6 patients) shifted to integumentary symptom, one-fourth (3 patients) shifted to musculoskeletal symptom and one patient shifted to respiratory symptom totaling to 83.3% shifting second time from the first shift symptom. Of 8 patients who had musculoskeletal symptom on first shift, two-third of them (5/8) shifted to another neurogenic symptom, e.g., 4/8 have shifted to gastrointestinal symptom and one patient shifted to integumentary system. Among 6 patients who were presented with respiratory symptom at first shift, 2 have shifted again to gastroenteric symptom and one patient shifted to integumentary symptom.

Having had two shifts with different neurogenic symptoms, about 30% (7/25) patients experienced third shifting as well. However, small number of patients at this stage demands for greater sample size for analysis and draw valid inference.

Discussion

With the rising experience of allergic disorders resulted from a complex interaction between genetic, environmental, and multiple lifestyle factors, the neurogenic switching of allergy over time has been of special interest of Bakson Homeopathy. The foregoing is to test the

hypothesis that there could be interplay between immunogenic and neurogenic switching of allergy.⁹ It has been observed that the p-value is less than 0.001 and 0.039 by Pearson Chi-square and Mc Nemar-Bowker Test respectively, shown the statistical significance of neurogenic switching of allergy during treatment. There are different studies available that support neurogenic switching of allergy but there are no such studies in the field of Homoeopathy. During the process of treatment, a physician must be vigilant to evaluate the miasmatic predominance in case of one-sided diseases like allergy; likewise neurogenic switching is another factor to understand the journey of allergic manifestation after prescribing homoeopathic medicine(s).¹⁷

Conclusion

The findings of the present study may play a vital role in strengthening the process of treatment in allergy management under one-sided diseases This study gives a clue in support of neurogenic switching of allergy with the concept of Allergy treatment at Bakson Homoeopathy. There is a need to undertake studies with greater sample size and randomized controlled trial in addition to establish the hypothesis scientifically for the establishment of a collateral theory related to allergy management in Homoeopathy.

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Conflicts of Interest

There is no conflict of Interest.

References

1. The International Study of Asthma and Allergies in Childhood (ISAAC) Steering Committee, Worldwide variation in prevalence of symptoms of asthma, allergic rhino conjunctivitis, and atopic eczema, *Lancet*, 351 (9111) (1998), pp. 1225-1232
2. J.F. Bach The effect of infections on susceptibility to autoimmune and allergic diseases *N Engl J Med*, 347 (12) (2002), pp. 911-920, 10.1056/NEJMra020100
3. C.K. Lai, R. Beasley, J. Crane, *et al.* Global variation in the prevalence and severity of asthma symptoms: phase three of the International Study of Asthma and Allergies in Childhood (ISAAC) *Thorax*, 64 (6) (2009), pp. 476-483, 10.1136/thx.2008.106609
4. Bjorksten, T. Clayton, P. Ellwood, A. Stewart, D. Strachan, I.P.I.S. Group Worldwide time trends for symptoms of rhinitis and conjunctivitis: phase III of the international study of asthma and allergies in childhood. *Pediatr Allergy Immunol*, 19 (2) (2008), pp. 110-124, 10.1111/j.1399-3038.2007.00601.x
5. L. Prideaux, M.A. Kamm, P.P. De Cruz, F.K. Chan, S.C. Ng Inflammatory bowel disease in Asia: a systematic review. *J Gastroenterol Hepatol*, 27 (8) (2012), pp. 1266-1280, 10.1111/j.1440-1746.2012.07150.x
6. Papadakis M, McPhee S, Rabow M. Current medical diagnosis & treatment 2020. 59th ed. 2020.
7. Bellavite, Paolo. (2011). Advances in homeopathy and immunology a review of clinical research. *Frontiers in Bioscience*. S3. 1363-1389. 10.2741/s230.
8. Colin P. Homeopathy and respiratory allergies: a series of 147 cases. *Homeopathy: The Journal of the Faculty of Homeopathy*. 2006 Apr;95(2):68-72. DOI: 10.1016/j.homp.2006.01.003. PMID: 16569621.
9. Meggs WJ. Neurogenic switching: a hypothesis for a mechanism for switching the site of inflammation in allergy and chemical sensitivity. *Environ Health Perspect*. 1995 Jan;103(1):54-6. doi: 10.1289/ehp.9510354. PMID: 7628426; PMCID: PMC1519059.
10. Onorato J, Merland N, Terral C, Michel FB, Bousquet J. Placebo-controlled double-blind food challenge in asthma. *J Allergy Clin Immunol* 78:1139-1146 (1986).
11. Bousquet J, Chanéz P, Michel F-B. The respiratory tract and food hypersensitivity. In: *Food allergy: adverse reactions to foods and food additives* (Metcalfé DD, Sampson HA, Simon RA, eds). Oxford: Blackwell Scientific Publications, 1991; 139-149.
12. Adkins FM. Food-induced urticaria. In: *Food allergy: adverse reactions to foods and food additives* (Metcalfé DD, Sampson HA, Simon RA, eds). Oxford: Blackwell Scientific Publications, 1991; 129-138.
13. Parke AL, Hughes GRV. Rheumatoid arthritis and food: a case study. *Br Med J* 282: 2027-2029 (1981).
14. Panush RS, Stroud RM, Webster EM. Food induced (allergic) arthritis: clinical and serological studies. *Arthritis Rheum* 29:220 (1986).
15. Egger J, Wilson J, Carter CM, Turner MW. Is migraine food allergy? A double-blind trial of oligoantigenic diet treatment. *Lancet* 2: 865-869 (1983).
16. Mansfield LE, Vaughan TR, Waller SF, Haverly RW, Ting S. Food allergy and adult migraine: double blind and mediator confirmation of an allergic etiology. *Ann Allergy* 55: 126-129 (1985).
17. Samuel H. *Organon of Medicine*. 5th, 6th ed. New Delhi: B. Jain Publishers; 1995.