

Allergy Study

A Food Allergy Study Utilizing the EAV Acupuncture Technique

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Abstract: Six diagnostic measures were performed on 30 volunteers. Five of the six diagnostic measures are currently utilized procedures: challenge, skin, RAST, and IgE tests. The sixth and new method is based upon Electroacupuncture According to Voll (EAV). Results show degree of compatibility with the other five, particularly the food challenge test. As a new, non-invasive but sensitive test, it was found to

IT IS WIDELY recognized that most of the diagnostic tools available for identifying food allergy are not reliable. Draper refers to a number of the unreliability of skin tests in diagnosing food allergy.¹ The standard and most reliable method of testing for food allergy has been to eliminate the allergen, rechallenge, observing for the reinduction of symptoms. There is some controversy regarding the length of time that a food should be eliminated before rechallenging. Rowe recommended total elimination of a food for at least three weeks.² He observed that sometimes symptoms are not reintroduced into the diet. Rinkel et al. found four to ten days to be the optimal time to rechallenge following total elimination of the food.³ In food allergy, they emphasize the necessity of repeating this type of testing on three different occasions and require that one observe results on each occasion when the testing is properly done. Bahna recommends an approach utilizing some features of each of the above.⁴ Rinkel found that food allergy is fixed and cyclic. The latter is the most common form of food sensitivity. They observed that skin testing correlated positively with food sensitivity when tested clinically. Bock reports some usefulness of the prick test in screening for food allergy in four of 14 food antigens tested.⁵ Of the peanut, only 12 has a clinical response during a double-blind food challenge with peanut. Bahna indicates that skin testing for milk allergy is either immediate or delayed, and have noted a positive correlation of the immediate allergy with skin tests, as well as with allergen-specific radio-immunodiffusion test and the skin window test.⁶ However, individuals with delayed-onset variety of food sensitivity seldom had prick test results never positive and the leukocyte histamine release test was positive only slightly more often than in the control patient.

One of the principal shortcomings of most allergy tests, with the exception of the RAST (Radio-Immuno-diffusion Test), is that the procedure requires direct contact with the allergen. Thus, there is a risk factor involved for the individual, since the body's reaction is unpredictable. This distinguishes food allergy because in addition to the body's reaction which evokes immunological pathogenesis. Several papers addressing this subject refer to the latter as food intolerance or sensitivity.⁷⁻¹⁰ A simple and more objective method of identifying specific food allergies, including intolerance,

The EAV Instrument

The electroacupuncture diagnostic method utilizes a galvanometer designed to measure the skin's electrical activity at designated acupuncture points. It has been used in Europe for nearly thirty years to determine the abnormality, pathogenesis or energy imbalance of the body.^{11,12} Allergy is a functional entity.¹³

The electronic device designed by Dr. Reinhold Voll of Germany is a 10-micro ampere meter calibrated from 0-100. (The EMF = 1.5v). On the one hand, the probe, which constitutes the positive electrode, is used to press upon the selected acupuncture point. If the measurement system associated with that particular acupuncture point is free of pathological problems. At the "50" reading on the scale, the skin resistance is approximately 100,000 ohms.

If the initially measured maximum value decreases and settles at a lower value, it is called an "indicator drop". Voll considers the indicator drop as a determining disturbance of organ function. It is hypothesized that when function of the organ or a system is disturbed, the bioelectric resistance fails to maintain a fixed resistance with respect to the incoming current. As a result, a new equilibrium is established at a lower reading level.¹⁴

The individual with allergy should show an indicator drop when the allergic acupuncture points are being measured. There are four specific points on the hand, as illustrated in Fig. 1.¹⁵ Loci A-2 constitutes the control point. This point should produce an indicator drop if the person has an allergy. It is hypothesized to correspond with the following:

Loci A-1: Allergy with respect to the skin of the upper portions of the body, including the neck, upper extremities, and with respect to the lower extremities, minor pelvis, or allergic reactions due to food.

Loci A-3: Allergy with respect to the skin of the upper portions of the body, including the neck, upper extremities, and with respect to the lower extremities, allergic reactions due to inhalants.

Loci A-4: Allergy with respect to the scalp, the organs in the head, oral cavity, the nasal and paranasal sinuses.

In addition, the EAV technique uses actual food items to determine allergic reactions to these particular items. If a particular food item is

attached to the galvanometer, and the indicator drops, this is said to demonstrate the presence of allergy to the food item. If a diluted food item (homeopathic preparation) is placed on the aluminum plate, and equilibrium of "50" should be reestablished.¹⁶ This method can be used as inhalants. If the validity of the electrodiagnostic method can be established, it offers an attractive alternative to other diagnostic methods without actual contact between the patient and the allergen, thus removing the risk element. In addition, it offers a diagnostic method that may be kept in mind, a study to assess the validity of the electroacupuncture diagnostic method or Electroacupuncture According to Voll (EAV) was conducted from January to July 1982.

Materials and Methods

A total of 30 healthy adults volunteered for this study, and with 27 of these individuals completing all the requirements. Their ages ranged from 18 to 39 for the group. Fourteen men and sixteen women were included in this group. Through interviews, a comprehensive allergy history was obtained. This data was then sealed, assuring the diagnosticians performance under "blind" conditions.

Four senior EAV diagnosticians were assigned to perform EAV tests. Each diagnostician had at least six months of training. EAV reading level of resistance. To obtain this reading, the participant holds a brass electrode in each hand. If the reading registers between 80-86, "balance". Dr. Voll considers that this reading indicates the energy balance and energy level of the entire body.¹⁷ Subjects with readings from the study. These measurements were followed by measurement of the control point A-2; then A-1 for food allergy and A-3 for inhalants were obtained from the right and left sides of the body.

Specific food and inhalant items were then used to test for allergic response to these particular substances. Food items of milk, eggs, and nuts were sealed in similar containers. Inhalant substances of house dust, red top (a genus of grass), and horradendrum (a genus of milk), were sealed in similar containers. Two placebo containers with saline and glycerin were added to the test. The test solutions were then drawn for analysis of immunological reaction, the IgE levels and RAST (Radio-Immuno-diffusion Test). (IgE Analyses were conducted at the Allergy Laboratory, University of Hawaii at Manoa, while RAST analyses were conducted through Accupath (Smith Kline Laboratories). The unlabeled allergen extracts performed skin tests.

During the following weeks, food challenge tests for milk, egg, and rice were carried out. EAV measurements were obtained during the week after the initial test. However, the time interval between the particular food intake and the EAV measurement taken was not recorded or noted.

Evaluative Criteria

It is known that allergy tests do not yield results in absolute positive and negative terms.¹⁸ A subjective interpretation of findings is their various possible degrees of individual response.

A. EAV Test. For evaluative purposes, the original EAV data (indicator drop readings) were divided into five grades as specified in Table 1. The initial and the follow-up. Based on the graduations received upon initial and final tests, each participant was evaluated as negative or positive. To determine this were applied to a total of eight readings from each participant: the four points from the initial EAV test and four from the follow-up. For a negative diagnosis, all of the eight numbers must be in the range of 80-86. For a positive diagnosis, it was also given if less than three of the numbers are Grade 2 or if just one qualifies as Grade 3 on one side. To be deemed positive, one must have two or more of Grade 3, or any Grade 4 combined with other grades above Grade 2.

B. RAST Test. The results of the RAST test were graded as follows:

GRADE	INTERPRETATION
0	Negative
1	Borderline
2	Weakly Positive
3	Moderately Positive
4	Strongly Positive

C. IgE Test. The IgE test findings were rated in accordance with the following:

GRADE	TITER
0	Less than 500
1	500-700
2	700-800
3	800-900
4	Above 900

D. Skin Test. The intracutaneous testing was done using a 5:1 serial dilution technique. Extracts of whole milk, whole eggs, and whole aqueous food extracts purchased from Nollister-Stein Laboratory. Each food extract contained 500 pnu/ml and 0.4 percent phenol as a preservative. Each test also contained 0.1 percent sodium chloride and 0.275 percent sodium bicarbonate. Approximately 0.01cc of the test material was injected intracutaneously. A skin lesion 4 mm in diameter. After 10 minutes, this area was reexamined, and if the wheal area was greater than 5mm in diameter it was considered positive.

dilution is one-fifth the strength of the concentrate. Skin test grading was determined in the manner presented in Table 2.

E. History. The allergy/medical histories obtained from interviews with each participant yielded data on a range of symptoms, which, for indicated in Table 3.

Results

Table 4 depicts the composite results (positive and negative) for 27 research participants as detected by case history and five of the skin tests, RAST, and IgE. Of the 27 cases, five were negative for all the allergens. Five cases had only one positive result among all 16 tests. Seven cases had two positive results. Table 5 shows the number of positive or negative cases for each test.

Results of the EAV test, in comparison with the other, are found in Table 6. As a whole, the EAV results correlated with the others on 222 positive and negative diagnoses. A total of 74 false positive and 18 false negative points were obtained, with 29.5 percent of the points results were examined relative to the other tests on an individual basis, it was found that there is a high level of correlation with the food allergy history (74.1 percent), with the RAST and skin tests matching the EAV test on 68.8 and 63 percent of the points respectively. Tables 7 and 8 demonstrate comparative data between the skin test results and the history, food challenge, EAV and RAST tests. It can be seen that the findings match the others on 237 points, or 75.7 percent of the time. Table 9 presents the breakdown of the skin test results compared to the other tests. The highest correlation is with the RAST, where 81.5 percent of the points were found to be in agreement. Further, the skin test data match 63 percent of the points.

Tables 10 and 11 show the RAST test results in relation to those from the other diagnostic techniques. Some 225 matching points were of the total. When the RAST results were compared separately to the others, the highest correlation of matching was with the skin test, 81.5 percent. The history results were the next highest with 73.8 percent of the points matching. The EAV and food challenge tests with 73.8 percent of the points matching. The EAV and food challenge tests with 73.8 percent of the points matching.

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Table 12 delineates data from both IgE and RAST tests and contrasts the two. This table includes the 30 participants and their reactor antigens. It shows 80 percent correlation between the two tests (24 out of 30), and thus 20 percent of the findings were in disagreement. If IgE had negative results for the six antigens tested by the RAST.

Discussion

These findings reconfirm the notion that there is no simple, reliable clinical test available for allergy diagnosis. It can be seen, however, that the EAV test has a high sensitivity. The EAV results (see Table 4) showed virtually no positive findings when all the other tests were negative. When the EAV test of the other allergy tests for the same individual showed the same results. In general, the EAV data obtained in this experiment demonstrate a high correlation with the food challenge test, which is considered to be the most sensitive of the currently available diagnostic techniques for food allergy diagnosis. The EAV test is comparable with both skin and RAST tests.

Over the course of this study, the researchers identified several environmental influences that should be carefully accounted for in future experience of the testers in performing EAV measurements, the status of the participants' health and dietary habits, the time of day EAV test, location of the instrument itself are all significant factors which can effect the resultant EAV data. A basic study should be undertaken to determine, in addition, standardizing the timing of the interval between EAV test and the intake of special test foods during the food challenge test results. The control of these factors should serve to reduce baseline variation, and increase the test's sensitivity and specificity.

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References

1. Draper, W.L.: Food Testing in Allergy, Intradermal Provocative vs. Deliberate Feeding. Arch. Otolaryng., 95:169-171, 1972.
2. Rowe, A.H.: Elimination Diets and the Patient's Allergies. Philadelphia, Lee & Febiger, 1941
3. Rinkel, H.J., Randolph, T.G., Zeller, M.: Food Allergy. Springfield, Illinois, Charles C. Thomas, 1951.
4. Bahna, L.: Control of Milk Allergy: A Challenge for Physicians, Mothers and Industry. Ann.Allerg., 41:1-12, 1978.
5. Bock, S.A., Lee, W.Y., Remigio, L., Holst, A., May, C.D.: Appraisal of Skin Tests with Food Extracts for Diagnosis of Food Hypersensitivity. Ann. Allerg., 33:363-372, 1973.
6. Gallant, S.P., Bullock, J., Frick, O.L.: An Immunological Approach to the Diagnosis of Food Sensitivity. Clin. Allerg., 3:363-372, 1973.
7. Franklin, A.W.: Food Allergies. Roy. Soc. Health J., 90:243-247, 1970.
8. Todd, S., Mackarness, R: Allergy to Food and Chemicals. II. Investigation and Treatment. Nursing Times, 74:506-510, 1978.
9. Bahna, L.: op. cit.
10. Lehman, C.W.: A Double-Blind Study of Sublingual Provocative Food Testing: A Study of Its Efficacy. Ann. Allerg., 45:144-149, 1978.

11. Voll, R.: Twenty Years of Electroacupuncture Diagnosis in Germany: A Progress Report. *Amer. J. Acupuncture* 3(1): 7-17, 1975.
12. Voll, R: Twenty Years of Electroacupuncture Therapy Using Low Frequency Current Pulses. *Amer. J. Acupuncture*, 3(4): 291-314, 1975.
13. Voll, R.: Topographic Positions of the Measurement Points in Electroacupuncture. (Textual Vol. I.) *Med. Liter. Verlagsgesellschaft, L*
14. Schuldt, H.: The Application of Nosodes in Electroacupuncture According to Voll. *Amer. J. Acupuncture*, 9(2): 161-164, 1981.
15. Voll R.: Topographic Positions of the Measurement Points in Electroacupuncture. (Illustrated Vol. I). *Med. Liter. Verlagsgesellschaft,*
16. Voll R.: The Phenomenon of Medicine Testing in Electroacupuncture According to Voll. *Amer.J. Acupuncture*, 8(2):97-104, 1980.
17. Voll R: Topographic Positions of the Measurement Points in Electroacupuncture. (Textual Vol. I.), op cit.
18. Lehman, C.W.: The Leukocytic Food Allergy Test: A Study of Its Reliability and Reproducibility. *Effect of Diet and Sublingual Food I* 45:150-158, 1980.