Effectiveness in Oral *Rhus toxicodendron* Solution for Poison Ivy Prevention

Dermatology

Poison ivy and poison oak are the most common causes of allergic contact dermatitis in North America.[1] Millions of Americans suffer yearly from this miserable condition and the expense to treat the condition amounts to millions of dollars in direct and indirect healthcare costs. If a treatment can prevent or minimize reactions to poison ivy, poison oak and poison sumac, it can result in a significant decrease in healthcare dollars spent, an increase in productivity and a decrease in morbidity. This article reviews the effects of an oral solution of *Rhus toxicodendron* extract taken by patients during 2002 for the prevention of contact allergic dermatitis.

Table 1. Formulations for the Prevention of Poison Ivy

Rhus Tox Solutions 2x *Rx* *Rhus toxicodendron MT (1x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*	**Rhus Tox Solutions 8x** *Rx* *Rhus toxicodendron MT (7x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*
Rhus Tox Solutions 3x *Rx* *Rhus toxicodendron MT (2x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*	**Rhus Tox Solutions 9x** *Rx* *Rhus toxicodendron MT (8x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*
Rhus Tox Solutions 4x *Rx* *Rhus toxicodendron MT (3x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*	**Rhus Tox Solutions 10x** *Rx* *Rhus toxicodendron MT (9x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*
Rhus Tox Solutions 5x *Rx* *Rhus toxicodendron MT (4x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*	**Rhus Tox Solutions 11x** *Rx* *Rhus toxicodendron MT (19x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*
Rhus Tox Solutions 6x *Rx* *Rhus toxicodendron MT (5x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*	**Rhus Tox Solutions 12x** *Rx* *Rhus toxicodendron MT (11x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*
Rhus Tox Solutions 7x *Rx* *Rhus toxicodendron MT 61x solution) 1 mL* *Ethyl alcohol 7% solution 9mL*	**Rhus Tox 6x/12x solution** *Rx* *Rhus Tox 6x Solution 50mL* *Rhus Tox 12x Solution 50mL*

Chewing the leaves of the offending agents is a method of prevention that has been extolled for generations.

History

Poison ivy is found in most parts of the United States but is especially prevalent in the northeastern part of the country and in Canada. [2] Poison oak is found in the western United States and Canada. Poison sumac grows in the eastern United States and southeastern Canada. Poison Ivy, poison oak and poison sumac all contain the same oleoresin called urushiol, the agent that causes the severe allergic reaction to the species. Therefore, an individual who is sensitive to one of these species will be sensitive to all of then. Chewing the leaves of offending agents is a method of prevention that has been extolled for generations. Allergenic extracts that contain offending antigens have been used for almost 90 years for the diagnosis and therapy of various allergic conditions.[3] Hyposensitization with poison ivy extract was first investigated in the 1930s.[4] The use of commercially available oral and parenteral products for hyposensitization became common practice until the mid-to-late 1980s. On January 23, 1985, the US Food and Drug Administration announced its intentions to revoke licensure of all injectable toxicodendron oleoresinous preparations in February of 1986.[5] Oral extracts that met required potency levels and clinical effectiveness data were classified in Category I (products determined to be safe, effective and not misbranded).[3] However, no such products were ever brought to the market. The Council of Pharmacy and Chemistry admitted Rhus toxicodendron preparations into New and Nonofficial Remedies in 1926. The Council eventually withdrew its sanction of these preparations due to the lack of safety and efficacy data. The Council did, however, express its opinion that these agents are useful but cautioned for careful selection of patients and supervision of cases to avoid adverse reactions.

Methods

The solution used in our study was a concentration of 0.0001% Rhus toxicodendron (6x/12x). Rhus toxicodendron was obtained from the mother tincture provided by Boiron (Newton Square, Pennsylvania). A total volume of 30mL of the solution was dispensed in an amber glass bottle with a 1.5 mL dropper attached. A sublingual dose of 3mL was given on day 0, day 7 and day 14, followed by a maintenance dose of 3mL, which was given at monthly intervals for 7 more doses. (Hyposensitization reportedly lasts for 1 month if no maintenance dose is given).[7] The provided instructions were to hold for solution under the tongue for 30 seconds and to swallow any remaining solution. Therapy was intended to be initiated prior to March and continued through September, although was not always the case. (see Table 1 for compounded formulations for the prevention of poison ivy)

Results

A total of 73 patients, in the age range from 12 years to 75 years, were prescribed the *Rhus toxicodendron* oral solution by their physicians. In November 2002, only 58 (79%) of these patients could be contacted by phone or mail for follow-up. Two of these individuals did not suffer from a poison ivy reaction in the previous year and were excluded from the study. Of the remaining 56 patients, 25 (44.6%) had no poison ivy reaction for the year with the oral solution. An additional 27 (48.2%) patients either reported a reaction that was less severe or reported fewer poison ivy reactions for the year with the oral solution. Table 2 illustrates a breakdown of the severity of symptoms before and after treatment with *Rhos toxicodendron* oral solution. These results exceeded those founded by Gross in 1956 in which 120 (84.5%) of 161 patients were treated successfully. [8]

To measure satisfaction with the product, three follow-up questions were asked:

1. Would you use the product again?
2. Would you recommend the product to a family member or friend?
3. Would you recommend that your physician prescribe this medication for other patients?

All 58 respondents were included in this portion of the study, and 56 (96.6%) said they would use the product again, 54 (93.1%) would recommend the product to a family member or friend, and 54 (93.1%) would recommend that their physician prescribe this medication for other patients. Side effects were minimal; only one patient reported mild facial flushing. Epstein et al reported that up to 70% of the individuals treated reported pruritis ani. [9] The vehicle for oral solutions of Rhus toxicodendron seems to play a factor in the frequency of the development of pruritis ani. [10] Oil-based solutions are absorbed unabsorbed oil may reach the perineal area, which causes itching. Solutions that contain alcohol base seem to be better tolerated. The formulation used in this study had an alcoholic base, and no occurrences of pruritis ani were reported.

Table 2. Breakdown of the Severity of Symptoms of Poison Ivy Before and After Treatment with Oral *Rhus toxicodendron* Solution (n=56).

Symptoms Before Treatment	Symptoms After Treatment	Number of Respondents (Percentage)
Severe	Mild/moderate	17 (30.4%)
Moderate	Mild	10 (17.9%)
Severe	None	13 (23.3%)
Moderate	None	9 (16.1%)

Mild	None	3 (5.4%)
Other	Not applicable	4 (7.1%)

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Conclusion

It is apparent from the post-treatment follow-up survey that when dosed orally a dilute solution of Rhus Toxicodendron shows promise as an effective method to control reactions caused by poison ivy, poison oak, and poison sumac. Of the 56 patients surveyed, 52 (92.9%) reported a reduced severity in symptoms associated with allergic contact dermatitis. Some weaknesses of the study were a small sample size, the lack of a control group and the results being subjective and not based on patch tests. However, this therapy seems to be a worthwhile option for the prevention of allergic contact dermatitis from toxicodendrons.

References

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