Abstract:

Sarracenia purpurea is an anti-viral herb used historically for small pox (Lancet 80:430-431 1862). HSV 1 and 2 is a viral disease affecting millions of patients globally with vesicular lesions that can be very painful and that can last for weeks to months before they resolve, tending to manifest on mucosal membranes. Preliminary case reports by the author revealed that topical use when compounded in versabase gel (manufactured by Professional Compounding Centers of America), gave patients immediate relief from pain caused by the virus, and within 2-7 lesions were resolved or resolving fully. In this double-blind study, patients with HSV I and II were given the compounded S. purpurea extract or placebo, and applied either formulation directly to the lesions every 3-4 hours. Lesion number, size, and severity of pain or itching were measured. Outcomes were statistically significant at p < 0.05, demonstrating effectiveness within 2 days of S. purpurea against viral infections.

Background:

Herpes Simplex (HSV) is a viral infection that causes vesicular lesions, affecting 1 out of 4 Americans annually. Herpes lesions tend to manifest on oral or genital mucosal membranes, although they can erupt on almost any external tissue. The virus remains dormant on the dorsal root ganglion, travels up the peripheral nerves that supply the affected area, causing painful vesicular lesions that can last 6 weeks or longer. They are precipitated by stress, co-infections, trauma, sun, fevers, or low nutritional levels. HSV antibodies are detectable in 30% of those in high socioeconomic groups and in nearly 100% of low, while a large majority of cases are not clinically apparent (meaning, antibodies are not detectable). Diagnosis is generally made via clinical history and physical examination, although lab tests such as viral culture remains the gold standard to identify the virus; serum titer may identify the presence of IgG's or IgM's. Conventional treatment of the virus includes oral antiviral meds such as acyclovir with long-term dosing (one year or longer). Current Naturopathic treatment is immune support, topical lysine (an amino acid that inhibits viral growth), vitamin therapy, or antiviral herbs. Current OTC treatments can take two weeks or longer to relieve symptoms, and most of these treatments have not been verified with clinical trials.

Sarracenia purpurea (pitcher plant) is an herb native to most of the eastern United States and Canada. It is found as far west as Northeastern British Columbia. Its vast range makes it the most common and broadly distributed pitcher plant, even though most of its habitat has been destroyed. The plant is most often found in the wettest part of bogs and wetlands. Sarracenia Purpurea is a native, perennial, carnivorous plant whose evergreen leaves are modified into pitchers. The pitcher lies horizontally and is curved with a wide
open mouth, attracting insects via the secretion of a sweet nectar. Insect get trapped in the bottom of the pitcher, and then are digested by bacteria in the juice. The primary constituent of the pitchers are anthocyanins, such as delphinidin or cyanidin. Anthocyanins are known in nature (wiki) for their anti-oxidant, anti-viral, and apoptosis properties.

An extensive literature review was conducted to assess medicinal value of S. purpurea. Limited information was found, with most references on related species (i.e. S. flava extracts against tumor growth). The 1862 Lancet article is the first published reference regarding specific uses by Native Americans against small pox, while other references call the pitcher plant a "stimulating tonic, diuretic, and laxative" (Henriette). The root is thought to be helpful in relieving some gastric problems or any "torpid condition of the stomach, the intestines, the liver, the kidneys, or the uterus" (Henriette). It has also been said that some Native American tribes used the pitcher plant, to “prevent scar formation" (PDR. Lancet). Thus far, only one modern drug (Sarapin) has been FDA approved and manufactured for the treatment of neuromuscular or neuralgic pain (Rice, 2005; Sarapin). It appears, however, that without new research, the plant is generally thought to be "completely obsolete" (PDR), without "medicinal merit" (website), and its merit is "unsubstantiated" (PFAF).

**Purpose of Study (briefly summarize):**

The purpose of this study was to evaluate the ability clinically of a compounded pitcher plant (Sarracenia purpurea) extract in versabase gel to resolve lesions caused by HSV I and II, within two days. Markers such as pain, size of lesions, and duration of symptoms were evaluated relative to placebo (versabase gel only); patients were followed over the course of two weeks, and presented to clinic on days 1, 3, 5, and 14.

**Design:**

Men and Women ages 18 and up who were experiencing a current herpes outbreak (within three days of outbreak onset) were recruited via newspaper ads per Naturopaths International IRB consent. 33 patients enrolled in the study, which was conducted from January 2011-March 2011, with 9 degrees of freedom. Patients were enrolled whom had a previous diagnosis confirmed by their primary care doctor. Patients excluded from the study were those who were pregnant, had risk of herpetic encephalitis, widespread infection of herpes, were currently using antiviral medications or who did not have a current outbreak. Patients were seen at the Naturopaths International clinic in Flagstaff, AZ.

Patients were screened on day one for active lesions and exclusion criteria. If they qualified to participate, they were instructed as to any possible side effects/risks of enrolling in the study and informed consent was obtained as well as release of information for use in furthering research. Permission to obtain photos was also
obtained.

Patients were assigned randomly placebo or active, unknown to patient and researcher. Gel was applied to lesions every 3-4 hours in a small amount to cover the lesion and patients returned on days 3, 5, and 14. Photos of lesions were taken on patients who gave permission; size of lesion was measured as well as number and subjective pain scale 1-10, with 10 being the worse pain possible. This data was recorded and tracked for statistical purposes.

ANOVA and post-hoc test were used to test the hypothesis; if the data were not to fit parameters for normality, non-parametric scales would have been used to test the hypothesis.

**Intervention:**

Patients were given a ¼ oz tube of either versabase gel/S. purpurea liquid extract mix or versabase gel only. They applied the gel every 3-4 hours in an amount enough to cover the lesions over the course of two weeks.

**Outcome measures:**

For the 33 patients enrolled in this clinical trial, the mean and standard deviation values for diameter of lesion (in mm) and pain scale were calculated for days 1, 3, 5 and 14. Mean values were similar for both active (gel with pitcher plant extract) and placebo, at 8.2/8.3 and 6.1/4.1 respectively. However, by day 3 (designated as visit 2) there was nearly a 50% drop in lesion diameter for active group (to 4.2), while the placebo actually increased slightly (to 8.4). The active group continued to see a drop in lesion diameter to 1.5 mm and 0.2 mm by days 5 and 14 (shown on chart as visit 3 and 4). Pain rating showed a significant drop, from 6.1 to 0.2 in the active group by day 3 (visit 2), and to 0.0 for the duration of the study. In contrast, placebo group showed an increase in pain by day 3 (from 4.1 to 4.7), dropped slightly to 4.6 by day 5 and to 1.7 by the conclusion of the study (day 14). See below. Standard deviations from the mean (with n-22 for active group and n-11 for placebo) are also calculated below, and were used to obtain the t value.

| *VISIT NUMBER:*  
| 1=day 1;  
| 2=day 3;  
| 3=day 5;  
| 4 = day 14 |  
| mean lesion diameter by visit |  
| day | 1 | 2 | 3 | 4 |  
| active | 8.2 | 4.2 | 1.5 | 0.2 |
Number of lesions were totaled for both active and placebo groups and can be summarized as follows:

<table>
<thead>
<tr>
<th>Frequency of Lesions by visit and treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visit</td>
</tr>
<tr>
<td>Active</td>
</tr>
<tr>
<td>Placebo</td>
</tr>
</tbody>
</table>

Lesion numbers dropped by day 5 for the active group by 60% while, although the number stayed the same between days 1 and 3. For the placebo group, the number of lesions actually increased from days 1 to 3 and again from day 5 to 14.

Results:
A two-tailed test was used to evaluate results, with patient outcomes compared on standard bar graphs. This clinical trial was performed to evaluate the effectiveness in a compounded versabase gel/pitcher plant extract formulation on HSV I and II lesions within two days versus placebo. The data shows that for lesion diameter and pain, there is a significant reduction in symptoms (p<.05), while there was no change in number (frequency) of lesions for the active group. Therefore the results are significant for lesion diameter and pain and unlikely due to chance. See figures 1-3 at conclusion of this paper.

**Conclusions:**

Sarracenia purpurea is an effective treatment for lesions caused by HSV 1-2, reducing symptoms within two days of application verses placebo, and deserves further study to verify merit.

**References:**