대한한의진단학회지 제23권 제1호 (2019년 12월)
The Journal of the Society of Korean Medicine Diagnostics. 2019; 23(1): 1-12
[원저 Original Article]

Bee Venom 약침과 Sweet Bee Venom 약침의 득기감 특성에 관한 연구

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Abstract

A Study on the Acupuncture sensation Characteristics of Bee Venom and Sweet Bee Venom

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Objectives

The purpose of this study is to determine if there is a difference in acupuncture sensation depending on the bee venom pharmacopunctures. The study was designed to identify the intrinsic acupuncture sensation of the bee venom pharmacopunctures compared to saline.

Methods

Bee venom,(BV), Sweet bee venom(SBV), and normal saline were injected in order to the left of ST36 (Joksamni), ST37 (Sang-geoheo), right ST36 (Joksamni), ST37 (Sanggeoheo) each. The order of insertion of the BV, SBV, and normal saline was randomly assigned using a computerized random number table. The questionnaire used in this study was based on the Massachusetts General Hospital Acupuncture Sensation Scale (MASS).

Results : BV and SBV was statistically significantly higher than saline in soreness, aching, distention, sharp pain and itchiness. Above this, BV was statistically significantly higher than saline in tingling and throbbing. And SBV was statistically significantly higher than saline in warmth. BV was statistically significantly higher than SBV in ichiness.

Conclusion.

BV and SBV were mainly strong, heavy, and gave a sharp feeling to the subjects. The results of the study can be used as references for future bee venom pharmacopunctures use. In addition, the results of the study can be used as basic data for clinical trials using bee venom pharmacopunctures.

Key words

Bee venom, Sweet bee venom, Acupuncture sensation, Pharmacopuncture, Korean medicine.

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Ⅰ. Introduction

Bee venom pharmacopuncture is the artificial extraction and purification of bee venom to be used for treatment. It is injected into the area associated with the disease. Therefore, this paper describes the use of the drug's effects and the biochemical pharmacological action of the bee's poison[1].

Bee venom pharmacopuncture experimentally reported to have effects such as anti-inflammatory, analgesic, antipyretic, and increased immunity. oriental medicine, it can be used to treat disc herniation, stenosis, It has been widely used for diseases such as frozen shoulder[2], Lumber intervertebral disc herniation[3], rheumatoid arthritis[4], knee arthritis[5], autoimmune[6] and cancer[7].

Sweet bee venom is a medicine that removes hypersensitive substances to improve anaphylactic shock[8]. Previous studies have reported that the treatment effect is similar to that of conventional bee venom while minimizing allergic reactions. Therefore, it is being actively utilized in pharmacotherapy[9].

Previous studies have reported clinical use of medicinal venom pharmacopuncture. However, there are few studies on the acupuncture sensation of BV and SBV. Accordingly, the purpose of this study is to investigate the characteristics of BV and SBV and to use it in clinical practice.

Ⅱ. Method

1. Subject

The study included 37 healthy adults who agreed to take the test. Subjects who were suffering from allergic diseases, those with neurological impairment (sensory impairment), those with skin lesions or wounds, trauma, and others not suitable for acupuncture were excluded from the study.

2. Research period

The study began on March 1, 2015 and ended on June 30, 2015.

3. Method

The measurements were made on a bed in a quiet space. The room temperature was 25℃. All participants were tested in the same environment. Caffeine intake and smoking were restricted from 8 hours before the measurement.

BV, SBV, and normal saline were injected in order to the left of ST36 (Joksamni), ST37 (Sang-geoheo), right ST36 (Joksamni), ST37 (Sanggeoheo) each. The order of insertion of the BV, SBV, and normal saline was randomly assigned using a computerized random number table.

1) Manufacture of Parmacopuncture

This study used BV and SBV pharmacopuncture. All medicines used were made according to the Korean Pharmacopuncture Institute's Handbook of Pharmacotherapy and Preparations. Pharmacopunctures were prepared and used in the clean room of the Korean Pharmacopuncture Institute.

2) Procedure of Pharmacopuncture

The subjects were skin tested before participating in the study. 0.05 ml of the BV is injected into the L11(Gokji) and stabilized for about 30 minutes. The

study was conducted on volunteers who did not have a hypersensitivity reaction to the BV. The study was conducted 7 days after the skin test. The dose of injected pharmacopuncture was 0.1 cc for each point. ST36 (Joksamni) was placed between the tuberosity of tibia and the head of fibula with knee bent 90° in three dimensions under ST35 (Dokbi). ST37 (Sang-geoheo) was located at the side of the tibialis anterior to the three-dimensional position under ST36 (Joksamni).

The pharmacopuncture was prepared in advance with 0.2 cc of 1 cc dose in disposable insulin syringes (29 G, disposable insulin syringe, Sungshim, Korea). Therefore, subjects did not know the type of pharmacopuncture injected at each point.

3) Measure of Acupuncture Sensation

Pharmacopunctures were injected by a single medical practitioner with at least five clinical experience. The subjects expressed the type and intensity of acupuncture sensationing in the questionnaire within 15 minutes after pharmacopuncture injection. The questionnaire has a 10cm long line for each acupuncture sensation. The subject sets the most severe condition to 10 and displays the degree of acupuncture sensation in the questionnaire.

The questionnaire used in this study was based on the Massachusetts General Hospital Acupuncture Sensation Scale (MASS)[10]. This is the scale on which revised the existing subjective acupuncture sensation scale (SASS). It classified the acupuncture sensations into 13 categories (soreness, aching, deep pressure, heaviness, fullness, distention, tingling, numbness, sharp pain, dull pain, warmth, cold, throbbing, other). The itchiness was included in the indicator considering the characteristics of BV.

4) Statistics

All data were expressed as mean ± standard deviation. SPSS 21 (IBM, USA) was used for analysis. Differences in the intensity of acupuncture sensations depending on the presence or absence of pharmacopuncture experience were assessed using an independent t-test. One-way ANOVA was used to compare the difference in intensity of acupuncture sensation depending on the pharmacopuncture type and the intensity of acupuncture sensation according to the treatment site.

Ⅲ. Result

1. General Caracteristics of Subjects

The subjects were 22 males and 15 females. The mean age of the subjects was 25 ± 3.63 years. None of the subjects indicated that they had received medication within the last 3 months for the purpose of treating the disease.

2. Analysis of Acupuncture Sensation

1) Soreness

The mean and standard deviation of saline on pain 0.14±0.02. The mean and standard deviation of BV on pain are 3.32±0.29. The mean and standard deviation of SBV on pain are 2.87±0.22. BV and SBV were statistically significantly higher in soreness compared to saline. There was no statistically significant difference between BV and SBV.

2) Aching

The mean and standard deviation of saline on pain are 1.87±0.03. The mean and standard deviation of BV on pain are 4.21±0.13. The mean and standard deviation of SBV on pain are 3.26±0.16. BV and SBV were statistically significantly higher in aching compared to saline. There was no statistically significant difference between BV and SBV.

3) Deep pressure

The mean and standard deviation of saline on pain are 0.32±0.16. The mean and standard deviation of BV on pain are 2.99±0.26. The mean and standard deviation of SBV on pain are 1.15±0.46. BV and SBV were statistically not significantly higher in deep pressure compared to saline. There was no statistically significant difference between BV and SBV.

4) Heaviness

The mean and standard deviation of saline on pain are 0.51±0.25. The mean and standard deviation of BV on pain are 1.02±0.18. The mean and standard deviation of SBV on pain are 1.65±0.18. BV and SBV were statistically not significantly higher in heaviness compared to saline. There was no statistically significant difference between BV and SBV.

5) Fullness

The mean and standard deviation of saline on pain are 0.78±0.37. The mean and standard deviation of BV on pain are 2.41±0.22. The mean and standard deviation of SBV on pain are 1.81±0.24. BV and SBV were statistically not significantly higher in fullness compared to saline. There was no statistically significant difference between BV and SBV.

6) Distention

The mean and standard deviation of saline on pain are 1.49±0.05. The mean and standard deviation of BV on pain are 4.02±0.31. The mean and standard deviation of SBV on pain are 4.78±0.13. BV and SBV were statistically significantly higher in distention compared to saline. There was no statistically significant difference between BV and SBV.

7) Tingling

The mean and standard deviation of saline on pain are 0.13±0.08. The mean and standard deviation of BV on pain are 3.79±0.14. The mean and standard deviation of SBV on pain are 2.22±0.09. BV was statistically significantly higher in tingling compared to saline. There was no statistically significant difference between BV and SBV.

8) Numbness

The mean and standard deviation of saline on pain are 0.67±0.02. The mean and standard deviation of BV on pain are 2.95±0.24. The mean and standard deviation of SBV on pain are 1.75±0.12. BV and SBV were statistically not significantly higher in numbness compared to saline. There was no statistically significant difference between BV and SBV.

9) Sharp pain

The mean and standard deviation of saline on pain are 0.29±0.18. The mean and standard deviation of BV on pain are 5.66±0.20. The mean and standard deviation of SBV on pain are 4.67±0.21. BV and SBV were statistically significantly higher in pain compared to saline. There was no statistically significant difference between BV and SBV.

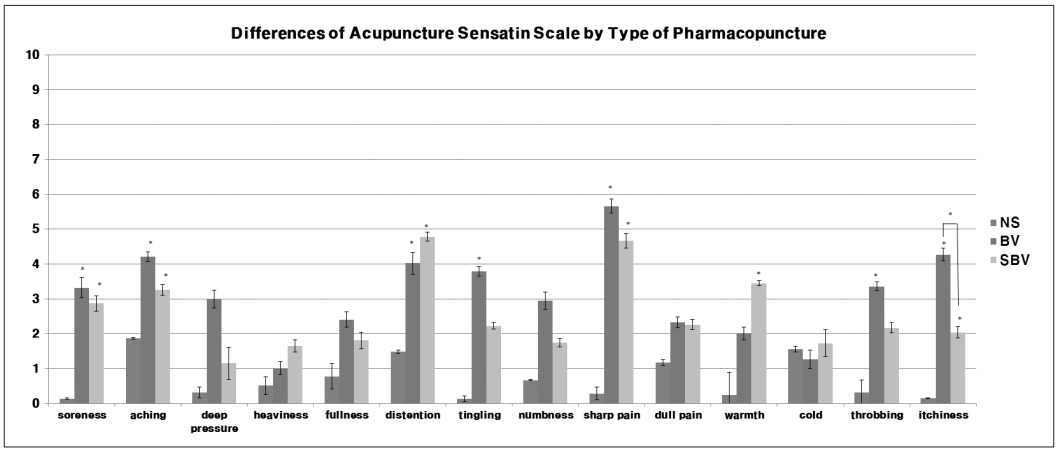

Figure 1. Differences of acupuncute sensation scale
NS: normal saline
BV: bee venom pharmacopuncture
SBV: sweet bee venom pharmacopuncture
*statistically significant by one way ANOVA with Bonferroni(P<0.05)

10) Dull pain

The mean and standard deviation of saline on pain are 1.18±0.08. The mean and standard deviation of BV on pain are 2.33±0.16. The mean and standard deviation of SBV on pain are 2.26±0.15. BV and SBV were statistically not significantly higher in pain compared to saline. There was no statistically significant difference between BV and SBV.

11) Warmth

The mean and standard deviation of saline on pain are 0.24±0.65. The mean and standard deviation of BV on pain are 2.01±0.18. The mean and standard deviation of SBV on pain are 3.45±0.08. SBV was statistically significantly higher in warmth compared to saline. There was no statistically significant difference between BV and SBV.

12) Cold

The mean and standard deviation of saline on pain are 1.56±0.08. The mean and standard deviation of BV on pain are 1.27±0.26. The mean and standard deviation of SBV on pain are 1.73±0.38. BV and SBV were statistically not significantly higher in cold compared to saline. There was no statistically significant difference between BV and SBV.

13) Throbbing

The mean and standard deviation of saline on pain are 0.32±0.36. The mean and standard deviation of BV on pain is 3.36±0.13. The mean and standard deviation of SBV on pain are 2.17±0.14. BV was statistically significantly higher in throbbing compared to saline. There was no statistically significant difference between BV and SBV.

14) Itchiness

The mean and standard deviation of saline on pain is 0.16±0.01. The mean and standard deviation of BV on pain is 4.27±0.18. The mean and standard

deviation of SBV on pain is 2.04±0.16. BV and SBV were statistically significantly higher in itchiness compared to saline. There was statistically significant difference between BV and SBV.

Ⅳ. Discussion

The purpose of this study is to determine whether there is a difference in acupuncture sensation depending on the type of pharmacopuncture and to use it in future clinical studies. For this, 37 healthy adults participated in the study.

BV showed above 4.0 at aching, distention, sharp pain, and itching. SBV showed above 4.0 at distention and sharp pain. SBV showed a high acupuncture sensation of over 4.0 in distention, sharp pain. BV was statistically significantly higher than saline in soreness, aching, distention, tingling, sharp pain, throbbing, and itching. BV was statistically significantly higher than saline in soreness, aching, distention, sharp pain, warmth, and itching. BV was significantly higher than SBV in the itching.

According to the study, there are five types of nerve fibers in the human body that are involved in acupuncture sensation. They are Aα, Aβ, Aγ, Aδ and C. Lamont[11] reported the following research results on this. 'First pain', a sharp, stabbing acute pain, is transmitted by Aδ fibers. The second or slow pain that subsequently spreads is transmitted by the C fibers. That is, the amount of stimulus is large and wide, and the burning pain is transmitted by the C fiber. Hudspith[12] also notes that Aδ fibers transmit short lasting sting type pain and that C fibers transmit dull, non-local, and burning type of pain.

Wang[13] showed different sensations depending on the type of nerve fibers stimulated. Aβ and Aγ fibers showed numbness sensation, Aδ fibers showed distention and heaviness sensation, and C fibers showed soreness sensation.

Pharmacotherapy is a therapeutic regimen that improves the disease state through the biochemical reaction of the human body to bee venom. Bee venom has high blood pressure, inflammation, and analgesia. In clinical practice, bee venom is used for lumbar disc herniation, rheumatoid arthritis, and arthritis. However, bee venom causes an allergic reaction, which can lead to anaphylactic shock, which is a systemic immediate response. Therefore, it should be administered carefully by a Korean medicine doctor.

To reduce this risk, bee venom Sweet Bee Venom (SBV) has been developed, which has eliminated enzymes, including PLA2, the major allergen component of bee venom. It uses the fact that the molecular weight of enzymes including PLA2 is over 10,000. It removes more than 10,000 molecular weight components by gel filtration, chromatography, propionic acid, polyacrylamide gel and electrophoresis depending on the molecular weight of protein. This difference may be the cause of the difference between

However this study investigates only the acupuncture sensations of pharmacopunctures, and there is a limit to the analysis of the therapeutic effects of pharmacopunctures. In addition, the number of pharmacopunctures is limited and the research period is not long. Future research will be needed.

V. Conclusion

We investigated whether there is a difference in acupuncture sensation depending on the type of pharmacopuncture using BV, SBV, and Normal Saline. following conclusions were obtained.

1. BV showed a high acupuncture sensation (over 4.0) in aching, distention, sharp pain, and itchiness.
2. SBV showed a high acupuncture sensation (over 4.0) in distention and sharp pain.
3. BV was statistically significantly higher than saline in soreness, aching, distention, tingling, sharp pain, throbbing and itchiness.
4. SBV was statistically significantly higher than saline in soreness, aching, distention, sharp pain, warmth and itchiness.
5. BV was significantly higher than SBV in itchiness.

Based on this research, further studies on the relationship between acupuncture sensation and the effectiveness of treatment or the selection of treatment methods that change according to acupuncture sensation may be conducted.

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