

A Pilot Study of Topical Bee Venom for Wrinkles

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Background

The appearance and characteristics of the skin alter as the body ages. The process is accelerated in areas exposed to sunlight, a process known as photoageing, and by other factors including smoking. The pathogenesis is thought to be deterioration of the elastic tissue network making the skin looser, excessive, and with a reduced ability to snap back to its original state after being deformed.

Bee stings have been used medically for hundreds of years to help with pain and inflammation and there has recently been interest in the use of topical bee venom preparations for cosmetic purposes. Honey bee venom (apitoxin) is a complex mixture of proteins, the main one being melittin. The venom causes local inflammation and acts as an anticoagulant, leading to swelling.



As an anti-ageing product, there are many anecdotal reports and media stories stating that it is effective at reducing the appearance of wrinkles. It is said to act within a few minutes and last for up to 12 hours. The mechanism is thought to be that it causes a mild inflammation and swelling that fills in wrinkles. When used on a regular basis, the mild chronic inflammation is thought to stimulate collagen production that can result in longer-term wrinkle reduction.

Methods

This open-label pilot study assessed the effectiveness of topical bee venom at reducing the appearance of wrinkles, and determined the effective dose.

29 women (ages 47-66) with visible wrinkles and no known allergies to bee products took part in the trial.

Participants were asked to apply product to the wrinkled areas twice a day and rinse off after 20 minutes with warm water. No other anti-wrinkle product was used during the study period.

Effectiveness was assessed by:

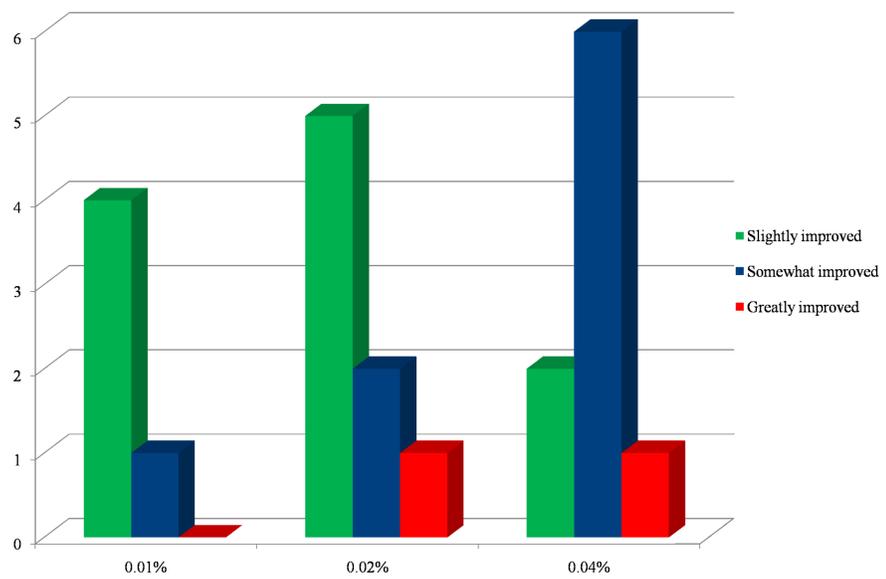
- a participant global evaluation (greatly improved, somewhat improved, slightly improved, unchanged, slightly worsened, somewhat worsened, greatly worsened)
- a 0-5 point photographic wrinkle scoring system
- by asking whether they would recommend the product to others
- by recording adverse events

Results

10 participants used 0.005% bee venom in honey. 5/10 said they noticed an improvement in appearance of wrinkles (4 slightly improved, 1 somewhat improved). The average improvement on the photographic wrinkle scoring system was 0.16. 2/10 said they would recommend this product to others.

9 participants used 0.02% bee venom in honey. 8/9 said they noticed an improvement in appearance of wrinkles (5 slightly improved, 2 somewhat improved, 1 greatly improved). The average photographic wrinkle scale improvement was 0.28 and 6/9 said they would recommend this product to others.

10 participants used 0.04% bee venom in aqueous cream. 9/10 noticed an improvement in appearance of wrinkles (2 slightly improved, 6 somewhat improved, 1 greatly improved) and the average wrinkle scale improvement was 0.2. 8/10 said they would recommend the product to others.



The only adverse reaction by anyone in the trial was by 1 participant using the highest strength product who reported a rash.

Conclusion

This small, open-label pilot study indicates that topical bee venom may be a safe and effective treatment for wrinkles.

About Bee Venom

Honey bee venom (apitoxin) is a bitter colourless liquid produced in the abdomen of worker bees. When a person is stung a honeybee injects around 0.1 mg of venom via its stinger. Apitoxin is acidic (pH 4.5 to 5.5) and the active portion of the venom is a complex mixture of proteins, which causes local inflammation and acts as an anticoagulant. Around 1% of people are allergic to bee stings.



The main components are:

Melittin - the main component (around half), a strong anti-inflammatory agent which induces the production of cortisol

Apamin - increases cortisol production and is a mild neurotoxin

Adolapin - acts as an anti-inflammatory and analgesic

Phospholipase A2 - around 10-12% of peptides, an enzyme which degrades the phospholipids which cellular membranes are made of. Also inhibits blood coagulation

Hyaluronidase - dilates the capillaries causing inflammation

Histamine - involved in the allergic response

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Conflict of Interest

SH is a shareholder of HoneyLab Ltd, which partly owns the product Kanu Bee Venom

Further information

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