British Acupuncture Council

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Acne

Introduction

Background

Acne vulgaris, the most common type of acne, is a chronic inflammatory skin disease affecting hair follicles, and sebaceous glands and ducts. It occurs on the face in 99% of those affected and, less often, on the back and chest. (Layton 2010).

Characteristic features include overproduction of sebum (seborrhoea); thickening of the follicle stratum corneum, which can lead to blockage and accumulation of sebum to form non-inflamed lesions called comedones; colonisation of the pilosebaceous ducts by Propionibacterium acnes; and inflamed lesions (e.g. papules, pustules, inflamed nodules, pus-filled cysts) that may be superficial or deep.(Layton 2010; Garner 2003) Scarring can result from abnormal wound healing following inflammatory damage.(Layton 2010) Acne conglobata is an uncommon and unusually severe form of acne characterised by burrowing and interconnecting abscesses and irregular scars.

In the UK, around 15 per 1,000 people have acne. (Schofield 2009) The condition usually starts in adolescence and frequently resolves by the mid-20s.(Layton 2010) Severe disease can persist for 12 years or longer.(Layton 2010) Acne can have an impact on psychological well-being.(Schofield 2009; Smithard 2001) The exact cause of acne is unknown, but androgen secretion is the major trigger for adolescent acne.

Conventional treatments include topical products containing azelaic acid or benzoyl peroxide for mild acne, topical or oral antibiotics, topical or oral retinoids and, for women, pills containing anti-androgens (eg Dianette).

Clinical Evidence

Evidence pooled together in a systematic review has shown that acupuncture plus moxibustion is safe and effective for the treatment of acne, and possibly better than routine western medicine. (Li 2009) (see Evidence Summary) In one randomised controlled trial, acupuncture treatment of moderate acne vulgaris was associated with reduction of inflammatory lesions and improvement of the quality of life, but there was no non-acupuncture control for comparison (Son 2010). In another, adding warming moxibustion to a baseline acupuncture treatment improved the outcomes similarly to that of adding the drug isotretinoin (Mi 2010). Finally, one trial found body acupuncture to have some effect in the treatment of acne vulgaris, and that the addition of laser auricular irradiation may improve efficacy (Lihong 2006). There is very little research on acupuncture and acne outside of China. Most of the trials to date are of low quality and the conclusions of the systematic review should be viewed in that light.

Potential mechanisms

In general, acupuncture is believed to stimulate the nervous system and cause the release of neurochemical messenger molecules. The resulting biochemical changes influence the body's homeostatic mechanisms, thus promoting physical and emotional well-being. Stimulation of certain acupuncture points has been shown to affect areas of the brain that are known to reduce sensitivity to pain and stress (Hui 2010).

Acupuncture may help to treat acne through one or more of the following general mechanisms, but as yet we have no specific information from studies on people with acne:

- reducing inflammation, by promoting release of vascular and immunomodulatory factors (Zijlstra 2003; Kavoussi 2007);
- enhancing natural killer cell activities and modulating the number and ratio of immune cell types (Kawakita 2008);
- increasing local microcirculation (Komori 2009), which aids dispersal of swelling.

References

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Schofield JK et al. Skin conditions in the UK: a health care needs assessment. First edition. Nottingham: Centre of Evidence Based Dermatology, 2009.

Smithard A et al. Acne prevalence, knowledge about acne and psychological morbidity in mid-adolescence: a community-based study. Br J Dermatol 2001;145: 274-9.

Strauss JS et al. Guidelines of for acne vulgaris management. J Am Acad Dermatol 2007; 56: 651-63.

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Evidence summaries

Research	Conclusion
Reviews	
Li B et al. Evaluation of therapeutic effect and safety for clinical randomized and controlled trials of treatment of acne with acupuncture and moxibustion. Zhongguo Zhenjiu [Chinese] 2009; 29: 247-51.	A review that evaluated the therapeutic effect and safety of acupuncture and moxibustion for the treatment of acne, and to analyse the current situation of clinical studies at present. Seventeen papers, including 1,613 patients, were included and all adopted the cured rate as the evaluation index, Meta-analysis comparing treatment of acne by acupuncture plus moxibustion with routine western medicine as a control found acupuncture to be more effective [combined relative risk 2.96, 95% CI 1.63 to 4.91; p<0.0001]. The researchers concluded that acupuncture plus moxibustion is safe and effective for the treatment of acne, and possibly better than routine western medicine.
Randomised controlled trials	
Son BK et al. Efficacy of ah shi point acupuncture on acne vulgaris. Acupuncture in medicine 2010; 28: 126-9.	A double-blind randomised placebo-controlled trial that evaluated the efficacy of ah shi (painful) point and general acupuncture point treatment of moderate acne vulgaris in 36 patients. Patients were evaluated using the following outcome measurements: an inflammatory lesion count, a quality-of-life scale (Skindex-29) and a subjective symptom score. After 12 treatment sessions, there was a significant reduction in the inflammatory acne lesion counts, the Skindex-29 scores and the subjective symptom scores from baseline in both groups, but no significant difference between groups. The researchers concluded that acupuncture treatment of moderate acne vulgaris was associated with reduction of inflammatory lesions and improvement of the quality of life.
Mi JP, Yu ZS. Clinical observation of cystic acne treated with warming moxibustion. Zhongguo Zhen Jiu [Chinese] 2010; 30: 383-6	A randomised controlled trial that assessed the clinical efficacy of warming moxibustion on cystic acne in 94 patients. The basic treatment of body acupuncture combined with fire needling was applied in all of three groups. In the observation group, cone moxibustion was added to specific points (CV 4, CV 6, BL 20). In control group 1, oral isotretinoin was given in addition to acupuncture, and in control group 2, no additional therapy was given. After treatment, the total effective rate was 84.4% (27/32) in the observation group, 71.0% (22/31) in control group 1 and 51.6% (16/31) in control group 2. Both for total effective rate and for improvement in skin lesions the observation group was superior to control group 2 (p0.05). The researchers concluded that warming moxibustion can improve the efficacy of body acupuncture and fire needling on cystic acne, and it is equal in efficacy to isotretinoin.

Research	Conclusion
Randomised controlled trials	
Lihong S. He-Ne laser auricular irradiation plus body acupuncture for treatment of acne vulgaris in 36 cases. J Tradit Chin Med 2006; 26: 193-4.	A randomised controlled trial that observed the therapeutic effects of laser auricular irradiation plus body acupuncture for acne vulgaris in 68 patients. The test treatment was compared with body acupuncture only. The results showed that the cure rate was 77.8% in the treatment group and 46.9% in the control group ($p<0.05$). The researchers concluded that the addition of laser auricular irradiation to body acupuncture may improve efficacy in the treatment of acne vulgaris.
Research on mechanisms for acupuncture	
Hui KK et al. Acupuncture, the limbic system, and the anticorrelated networks of the brain. Auton Neurosci 2010; 157: 81-90.	A paper that discusses research showing that acupuncture mobilises the functionally anti-correlated networks of the brain to mediate its actions, and that the effect is dependent on the psychophysical response. The research used functional magnetic resonance imaging studies of healthy subjects to show that acupuncture stimulation evokes deactivation of a limbic-paralimbic-neocortical network, which encompasses the limbic system, as well as activation of somatosensory brain regions. It has also been shown that the effect of acupuncture on the brain is integrated at multiple levels, down to the brainstem and cerebellum.
Komori M et al. Microcirculatory responses to acupuncture stimulation and phototherapy. Anesth Analg 2009; 108: 635-40.	Experimental study on rabbits in which acupuncture stimulation was directly observed to increase diameter and blood flow velocity of peripheral arterioles, enhancing local microcirculation.
Kawakita K et al. Do Japanese style acupuncture and moxibustion reduce symptoms of the common cold? eCAM 2008; 5: 481-9.	A review of research into the effects of Japanese style acupuncture and moxibustion on the symptoms of the common cold. It reports that research has shown acupuncture to reduce common cold symptoms, and that acupuncture stimulation enhances natural killer cell activities and modulates the number and ratio of immune cell types.
Kavoussi B, Ross BE. The neuroimmune basis of anti-inflammatory acupuncture. Integr Cancer Ther 2007; 6: 251-7.	Review article that suggests the anti-inflammatory actions of traditional and electro-acupuncture are mediated by efferent vagus nerve activation and inflammatory macrophage deactivation.

Research	Conclusion
Research on mechanisms for acupuncture	
Zijlstra FJ et al. Anti-inflammatory actions of acupuncture. Mediators Inflamm 2003; 12: 59-69.	An article that suggests a hypothesis for anti-inflammatory action of acupuncture: Insertion of acupuncture needles initially stimulates production of beta-endorphins, CGRP and substance P, leading to further stimulation of cytokines and NO. While high levels of CGRP have been shown to be pro-inflammatory, CGRP in low concentrations exerts potent anti-inflammatory actions. Therefore, a frequently applied 'low-dose' treatment of acupuncture could provoke a sustained release of CGRP with anti-inflammatory activity, without stimulation of pro-inflammatory cells.