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Gout

Overview

Background

Acute gout is an intensely painful condition, and can reduce patients quality of life.(Annemans 2008; Jordan 2007) Around 1.4% of the UK population have gout, the prevalence of which increases with age to around 3% in women and 7% in men aged over 75 years.(Mikuls 2005; Annemans 2008; Jordan 2007) It occurs when serum uric acid concentration rises (hyperuricaemia) and stays above the solubility threshold of monosodium urate, leading to urate crystal formation that causes arthritis, gouty tophi (nodules) in subcutaneous tissues and renal calculi.(Jordan 2007; Roddy 2007; Fels 2008)

Hyperuricaemia may occur if urate is over-produced (e.g. due to excessive dietary purine intake, or during cancer treatments), or, more commonly, if it is under-excreted (e.g. due to renal impairment).**(Jordan 2007)** Chronic hyperuricaemia is the most important risk factor for the development of gout; others include male gender; obesity; hypertension; renal impairment; consumption of alcohol, red meat, shellfish, fructose-sweetened soft drinks; and the use of loop and thiazide diuretics.**(Jordan 2007)** The mainstay of treatment for chronic gout is long-term drug treatment with allopurinol or adenuric to prevent attacks, and NSAIDs during an acute attack to reduce inflammation and alleviate pain.

Clinical research

Overall, very little research has been published on the effects of acupuncture in patients with gout. There are no systematic reviews looking at acupuncture for gout, but there are a few randomised controlled trials. These have found: acupuncture combined with infrared irradiation is more effective in acute gouty arthritis than indomethacin, and provides a significant analgesic effect, while not reducing liver function (Zhou 2011); surround needling therapy is more effective and safer than allopurinol for the treatment of acute gouty arthritis (Xie 2009); electroacupuncture combined with local blocking (Liu 2008) or point-injection (Zou 2007) is an effective method for treating acute gouty arthritis, and can decrease blood uric acid levels; electroacupuncture has a better treatment effect than either allopurinol or probenecid, and there are no harmful effects on renal function in the treatment of patients with gout and renal insufficiency (Xie 2007); electroacupuncture is an effective treatment for acute gouty arthritis, and low frequency (2 Hz) electroacupuncture is more effective than higher frequencies (Zou 2006); and, acupuncture may exert good therapeutic effects on early gout complicated with renal damage (Ma 2004). Thus the evidence so far indicates acupuncture to be more effective than medication and without serious side effects. However, all of the trials are from one

country (China) and, with no systematic reviews, the quality of the research has not been closely scrutinised.

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) It has also be shown to reduce inflammation, by promoting release of vascular and immunomodulatory factors.(Zijlstra 2003; Kavoussi 2007)

Research has shown that acupuncture treatment may help relieve pain and prevent acute attacks of gout by:

- Reducing the production of uric acid and promoting its excretion (Xie 2007);
- Restoring the various metabolic pathways that are disturbed in individuals with gout.(Wen 2011);
- Reducing inflammation, by promoting release of vascular and immunomodulatory factors (Zijlstra 2003; Kavoussi 2007). Increasing local microcirculation (Komori 2009);
- Acting on areas of the brain known to reduce sensitivity to pain and stress, as well as promoting relaxation and deactivating the analytical brain, which is responsible for anxiety and worry (Hui 2010; Hui 2009);
- Increasing the release of adenosine, which has antinociceptive properties (Goldman 2010).

References

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