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The role of Western herbal medicine in the treatment of gout

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ABSTRACT

Gout has been recognised as a clinically distinct disease for over four millennia. It is one of the most prevalent inflammatory arthropathies and a true crystal deposition disease. Current consensus holds that its management in primary orthodox healthcare is sub-optimal. This study aimed to identify whether herbal medicine offers an effective alternative or complementary approach for managing patients with acute and chronic gout.

Three approaches were taken: a survey of medical herbalists to gauge contemporary approaches; historical and contemporary texts were scrutinised to identify any herbs indicated for gout; and an evidence review to establish the current evidence base for the herbal treatment of gout.

While gout was not a frequent presentation in practice, the majority of medical herbalists surveyed had treated it at some point in time. Moreover, most reported herbal medicine had a definite benefit for patients with gout, usually taking effect within one or two months. In general, the herbs used in clinical practice were mainly chosen for their ability to eliminate uric acid (*Apium graveolens*, *Urtica* spp, *Taraxacum officinale*) or as anti-inflammatories (*Harpagophytum procumbens*, *Filipendula ulmaria*, *Salix* spp, *Betula* spp, *Curcuma longa* and *Guaiacum* spp.). There was some agreement in the more popular herbs cited for gout in herbal texts and prescribed by practitioners, and given the lack of scientific evidence identified, suggests herb choice was largely influenced by traditional use.

A paucity of evidence was highlighted regarding the effectiveness of Western herbal medicine for gout, a single clinical trial was identified; however, it was of poor quality with unclear or high risks of bias.

Given the effectiveness of herbal medicine in treating patients with gout reported by practitioners, together with the lack of a strong evidence-base identified in this study, further research is warranted. Practice-based evidence, such as the systematic collection of clinical treatment outcomes in practice, together with large, well-designed pragmatic clinical trials are required to establish the effectiveness of herbal medicine in the treatment of gout.

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1. Introduction

Gout has long been recognised as a clinically distinct disease: identified by the Egyptians over 4650 years ago and later documented by Hippocarates and Plato (Nuki and Simkin, 2006; Porter and Rousseau, 1998). It is one of the most prevalent inflammatory arthropathies and a true crystal deposition disease, directly attributable to the presence of monosodium urate (MSU) crystals in joints and other tissues (Doherty, 2009; Roddy, 2011a). Recent studies in UK primary care estimate a 5-year prevalence of 1.4% overall (Annemans et al., 2008) and similarly, a 10-year prevalence of 2.24% for men and 0.60% for women (Parsons et al., 2011). In both studies, women represented 18% of the study population with gout.

Multiple risk factors contribute to the development and progression of gout and can be classified as either non-modifiable risk factors, namely genetics, age and gender, or modifiable risk factors including hyperuricaemia, diet, alcohol, medications, comorbidities, body mass index and physical fitness (Crittenden and Pillinger, 2011; Doherty, 2009; Dubchak & Falasca, 2010; Neogi, 2011; Smith et al., 2010; Teng et al., 2006; Underwood, 2006). These latter risk factors are often the focus of multifaceted interventions in the management of gout.

Gout is predominantly managed in primary care (Roddy, 2011b), with recommendations that optimal treatment involves both pharmacological and non-pharmacological approaches, individually tailored according to the clinical phase of gout, risk factors and patient preference (Underwood, 2006; Zhang et al., 2006).

In acute gout, the mainstay of treatment is anti-inflammatory medication. Oral non-steroidal anti-inflammatory drugs (NSAIDs) and/or colchicine are first-line agents (Zhang et al., 2006), with systemic corticosteroids used when NSAIDs and colchicine are contraindicated or ineffective (Gonzalez, 2012). In acute monoarticular gout, joint aspiration followed by intra-articular corticosteroid injection is considered most effective (Roddy, 2011b). Adjuvant non-pharmacological treatments such as ice packs, rest and elevation of the affected joint may also be employed (Map of Medicine, 2012; Underwood, 2006).

The therapeutic aim in chronic gout is to prevent further acute flare-ups and joint damage through long-term management of serum urate levels: keeping these sufficiently low, to promote the dissolution of existing MSU crystals and prevent new crystal formation (Roddy, 2011b). Initially, non-pharmacological approaches are usually suggested including weight loss, dietary modification, low alcohol consumption, and ensuring sufficient fluid intake and exercise (Jordan et al., 2007; Underwood, 2006; Zhang et al., 2006). The decision to pharmacologically treat hyperuricaemia often follows the failure of these non-pharmacological approaches, resulting in frequent and difficult to control gout attacks, or chronic low-grade inflammation. Urate-lowering agents, such as allopurinol and febuxostat, are usually taken for life, and on initiation are given in combination with flare prophylaxis as they tend to cause 'rebound' flares (Shipley, 2011).

Gout management by orthodox healthcare is currently sub-optimal with physicians failing to follow treatment guidelines, frequent prescription of gout medications in individuals with (multiple) contraindications and patient preference and compliance issues (Chandratre et al., 2012; Doherty et al., 2012; Keenan et al., 2011; Lipworth et al., 2011). Thus, does herbal medicine offer an effective alternative or complementary approach to ensure the successful management of gout?

As a consequence of gout's early recognition as a clinical disease, long pre-dating modern medicine, there is an extensive tradition of herbal treatment exemplified by its mention in historical, and contemporary, pharmacopoeia and *Materia medica* (*e.g.* Culpeper, 1995; Fisher, 2009; Watkins et al., 2011). Current treatment by medical herbalists represents the culmination of millennia of clinical experience, which may be expected to have led to the evolution of some of the most effective herbal approaches to gout.

The aim of this study was to identify herbs that may benefit the treatment of patients with acute or chronic gout, through: examining historical and contemporary texts to identify herbal treatments; reviewing the current evidence base; and surveying herbalists to gauge contemporary herbal approaches.

2. Methodology

2.1. *Herbal texts*

To identify herbs traditionally, or more recently, used for the treatment of gout in Western herbal medicine, a selection of easily accessible historical and contemporary texts from Europe, North America and Australia, addressing the medicinal use of herbs was searched and all references to gout recorded. The texts spanned approximately 860 years, from around 1150 to 2011: 12th (Hildegard von Bingen, 1998), 17th (Culpeper, 1995), 19th (Cook, 1869; Fernie, 1897 [transcribed 2006]), 20th (Bartram, 1998; Grieve and Leyel, 1992; Priest and Priest, 1983; Vickery, 1995) and 21st centuries (Allen and Hatfield, 2004; Barker, 2007; Barnes et al., 2007; Bone, 2003; Felter, 1922; Fisher, 2009; Hoffmann, 2003; Kress, 2011; Menzies-Trull, 2009; Mills and Bone, 2000; Thomsen, 2005; Tobyn et al., 2011; Weiss, 2001; Wood, 2004, 2008a, 2008b)

2.2. *Literature review*

To identify clinical studies including observational, cohort and (randomised)-controlled trials, pertaining to the use of herbal medicine in gout, an electronic search was conducted of six online databases: MEDLINE (1946 to 2013 February 08); EMBASE (1974 to 2013 February 08); AMED (1985 to February 2013); CINAHL (1981 to February 2013); Web of Science (1970 to February 2013) and The Cochrane Library (1898 to Issue 1, January 2013). A systematic search protocol was designed and adapted to each database with the basic search strategy [gout OR synonyms] AND [herbal medicine OR synonyms] and utilised database-specific controlled vocabulary (*e.g.* for MEDLINE protocol see Appendix A). The quality of randomised