

## SHORT COMMUNICATION

## TARGETING HYPERTENSION AND HYPERURICEMIA SIMULTANEOUSLY: EXPLORING NATURAL REMEDIES FOR INTEGRATED TREATMENT

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This article explores the intricate relationship between hypertension and hyperuricemia, emphasizing the potential of natural remedies for integrated treatment. Hypertension and hyperuricemia, which frequently coexist, share common risk factors such as dietary habits, inflammation, and obesity. Elevated uric acid levels, a hallmark of hyperuricemia, contribute to hypertension through mechanisms like endothelial damage and activation of the renin-angiotensin-aldosterone system. While traditional medicine remains a cornerstone in many developing regions, natural remedies like cherry extract and turmeric show promise in managing these conditions. Cherry extract reduces uric acid and inflammation, while turmeric's curcumin improves blood pressure and endothelial function. Complementary dietary and lifestyle changes, including antioxidant-rich foods, regular exercise, stress management, and adequate hydration, further enhance the efficacy of these natural treatments. Integrating herbal supplements with these modifications can reduce dependence on pharmaceuticals and improve overall health. However, further research is needed to confirm the long-term benefits and interactions of natural remedies with conventional treatments. This comprehensive approach offers a tailored strategy for managing hypertension and hyperuricemia, ultimately improving patient outcomes and quality of life.

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### INTRODUCTION

Globally, natural remedies are widely utilized to treat a broad spectrum of acute and chronic ailments, especially in regions where modern healthcare is less accessible. In low- and middle-income countries, over 70% of Asian populations rely on medicinal plants for their healthcare needs. For instance, a survey in Pakistan revealed that nearly 57% of the population uses traditional medicine for various ailments.<sup>1</sup>

#### **The link between hypertension and hyperuricemia:**

The relationship between blood pressure and uric acid levels has gained attention in recent years.<sup>2</sup> Both hypertension and hyperuricemia share common risk factors, such as dietary habits, inflammation, and obesity. Elevated uric acid levels, which can lead to gout, have been implicated in the development of hypertension through mechanisms such as endothelial damage and activation of the renin-angiotensin-aldosterone system (RAAS).<sup>3,4</sup>

Globally, hypertension affects approximately 1.13 billion people, contributing to 13% of annual fatalities according to the World Health Organization (WHO).<sup>5</sup>

The WHO aims to reduce the prevalence of hypertension by 25% from 2010 baseline levels by 2025. Independent studies have highlighted a correlation between uric acid and blood pressure, although the causal relationship remains unclear.

**Understanding hyperuricemia:** Hyperuricemia, characterized by uric acid levels exceeding 6 mg/dL, has seen a global rise over the past decade. This condition results from the metabolism of purines, where the enzyme xanthine oxidase converts hypoxanthine into xanthine and uric acid. Persistent high levels of uric acid are a precursor to gouty arthritis.<sup>6,7</sup> Animal studies have linked hyperuricemia to vascular diseases, with urate-lowering drugs (ULDs) showing potential in reducing hypertension.<sup>2</sup>

Hyperuricemia can impair nitric oxide synthase activity, increase insulin resistance, activate the renin-angiotensin system, and promote vascular smooth muscle cell proliferation. These effects contribute to endothelial and arterial damage, exacerbating cardiovascular risks. In humans, hyperuricemia is associated with higher lipid levels and reduced fibrous volume, potentially increasing plaque fragility.<sup>8,9</sup>

**Natural remedies for managing hypertension and hyperuricemia:** Managing both hypertension and gout is challenging, but natural remedies offer promising solutions.<sup>10-11</sup> Herbal medications, known for their therapeutic properties, have shown potential in alleviating symptoms of these conditions.

### Key Herbal Remedies

1. **Cherry extract:** Known for its anti-inflammatory properties, cherry extract can lower blood uric acid levels and inflammatory markers, helping prevent gout flare-ups.<sup>12</sup>
2. **Turmeric (curcumin):** Curcumin, the active ingredient in turmeric, has strong anti-inflammatory and antioxidant properties. Studies suggest that curcumin supplements can improve blood pressure and endothelial function, benefiting cardiovascular health and reducing gout-related inflammation.<sup>13</sup>

**Dietary and lifestyle changes:** Integrating herbal supplements with dietary modifications is crucial for naturally controlling hypertension and gout. A diet rich in antioxidants and anti-inflammatory foods, such as fruits, vegetables, and nuts, can mitigate inflammation and oxidative stress linked to both conditions. Reducing purine-rich foods and salt intake can help manage uric acid levels and blood pressure, respectively.<sup>14, 15</sup>

Regular exercise, such as cycling, swimming, and brisk walking, can lower blood pressure, improve cardiovascular health, and aid in weight management. Additionally, stress-reduction techniques can decrease inflammation, reduce blood pressure, and minimize gout flare-ups.<sup>16</sup>

**Hydration and lifestyle modifications:** Adequate hydration is essential for managing both conditions, promoting renal health, and aiding in uric acid elimination. Water is preferable to alcohol and sugary drinks, which can exacerbate gout and raise blood pressure. Consistent dietary and lifestyle adjustments, combined with natural remedies, can lead to better management of hypertension and gout, enhancing overall health and quality of life.<sup>17-19</sup>

### CONCLUSION

Natural remedies provide a holistic approach to treating gout and hypertension, addressing each patient's unique needs and preferences. While herbal supplements and dietary changes can reduce the reliance on prescription medications and their side effects, further research is necessary to understand

their long-term benefits and interactions with conventional treatments. Ongoing support and education are vital to help individuals maintain these lifestyle changes and achieve lasting health improvements.

### AUTHORS' CONTRIBUTION

KA, SA, and RP: Concept and design, data acquisition, interpretation, drafting, final approval, and agree to be accountable for all aspects of the work. KA, SA, and RP: Data acquisition, interpretation, drafting, final approval and agree to be accountable for all aspects of the work.

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