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REPORT

Prevent Gout Attacks by Lowering Uric Acid Levels

By Michael Downey

Gout is a kind of arthritis that can cause an attack of sudden burning pain, stiffness, and swelling in a joint. This often occurs in the big toe. Gout attacks can happen over and over unless properly treated. Over time, this disorder causes harm to joints, tendons, and other tissues.

Gout is caused by high concentrations of uric acid in the body.[1] This condition leads to the creation of crystals in joints and tissues. Aside from pain so excruciating that some of the 8.3 million US sufferers[2] often cringe at the thought of putting a sheet over their foot at night, gout is associated with higher risks of cardiovascular disease and mortality.[3,4]

Drugs such as *allopurinol* and *probenecid* are typically used to help reduce uric acid levels, but the side effects can include breathing difficulties, unusual bleeding, vomiting, nausea, and severe rash.[5-7] These drugs may also interfere with other medications.[6,7]

Fortunately for gout sufferers and those with uric acid buildup, scientists have demonstrated the effectiveness of a natural alternative with a strong history of traditional Ayurvedic use and no reported side effects. Derived from the edible fruit of the ***Terminalia bellerica*** tree, this tannin-rich extract is believed to inhibit ***xanthine oxidase***, an enzyme involved in the synthesis of uric acid.[8]

A randomized, double blind, and placebo-controlled human clinical trial has recently confirmed the dose-dependent action of *Terminalia bellerica* extract in decreasing blood levels of **uric acid**.

In volunteers with elevated levels, one capsule of **500 mg** of *Terminalia bellerica* extract, taken twice daily, decreased uric acid by a mean of **27.59%**.

This decrease in uric acid levels enabled **88.8%** of the people in the study arm taking the extract to achieve targeted uric acid serum levels…with no side effects.[8]

Source of Excess Uric Acid and Gout

Uric acid is made from purines, which are organic compounds serving functions in DNA, RNA, and neurotransmission. Most purines are made naturally in the body, and the rest come from purines in the diet. Some people either produce too much uric acid or their kidneys have trouble getting rid of it, resulting in hyperuricemia.

Affecting millions of Americans, hyperuricemia leads to the inflammation behind painful attacks of gout and other diseases related to high uric acid. [2,9-11]

For example, multiple studies have linked hyperuricemia with a greater risk of hypertension, metabolic syndrome, coronary artery disease, cerebrovascular disease, preeclampsia, and kidney disease.[12]

Increasing prevalence of obesity, diuretic use, adverse lifestyle habits, and an aging population may all be contributing to recent increases in the prevalence of hyperuricemia.[8]

When the extreme pain of a serious gout attack has finally passed, some people want to forget about it as soon as possible instead of seizing the opportunity to cut their uric acid levels. But very few people, only **7%**, have just one gout attack. And over time, attacks can become more severe, more frequent, last longer, and inflame multiple joints.[13]

Gout is best known for causing unbearable pain focused in the big toe. However, gout can attack multiple joints at the same time. A survey showed that attacks also occur in the ankle or foot (**50%** of cases), the knee (**32%**), a finger (**25%**), an elbow (**10%**), or a wrist (**10%**).[14]

About **5%** to **8%** of adult males have asymptomatic hyperuricemia.[8,15,16] Uric acid levels above **8.6 mg/dL** in men or **7.1 mg/dL** in women are classified as hyperuricemia (although some laboratories and research groups use different limits).[17,18] When the serum uric acid level is greater than **9.0 mg/dL**, the probability of developing clinical gout is **6 times** higher.[8,15,16] A gout attack can be triggered at any time by a range of factors, including alcohol, certain medicines, other illnesses, or stress.[2,19,20]

Those whose uric acid is increasing due to age and other factors need to take action to reduce these levels before they suffer a gout attack or even develop cardiovascular/kidney disease.[12]

Targeting Xanthine Oxidase Enzyme

Until now, people with hyperuricemia haven't had many options. The drugs available to reduce uric acid buildup come with extensive and potentially deadly side effects.

One of the most common side effects of the gout medication *febuxostat* is liver problems, but according to this drug's own manufacturer, "*A small number of heart attacks, strokes, and heart-related deaths were seen in clinical studies*." Other common adverse effects include diarrhea, nausea, headache, rash, and ironically, joint pain and gout flares![21]

Another drug option is *allopurinol*. However, it was recently found that this prescription does not always decrease serum uric acid.[22] And both allopurinol and the uric acid-lowering drug *probenecid* are associated with side effects ranging from breathing difficulties to unusual bleeding.[5-7]

Scientists seeking a natural way to lower uric acid conducted research on the fruit of the *Terminalia bellerica* tree, which has been used in Ayurveda medicine for many years, mainly for removal of kidney stones and inflammation. Researchers studied an extract that was derived from this edible tree fruit that contains **15%** tannins. This extract and its potent tannins appears to inhibit an *enzyme* involved in the synthesis of uric acid, ***xanthine oxidase***.[8] Excess xanthine oxidase generates high levels of **uric acid** and can create crystals in joints and tissues, leading to gout.

In addition to inhibiting the manufacture of uric acid and therefore, the inflammation of gout, the bioactive compounds in *Terminalia bellerica* are believed to provide anti-inflammatory effects, possibly due to inhibition of *inducible nitric oxide synthase* (iNOS). Researchers reported *Terminalia bellerica* to be effective against problems involving painful or burning urination, urine discharge, bleeding in the kidney, and inflammation. It is also helpful with the removal of blocked urine and kidney stones.[8,23]

A placebo-controlled, human clinical investigation was needed to determine the therapeutic ability of *Terminalia bellerica* in patients with hyperuricemia or gout, and most critically, to specifically assess the extract's side effects relative to the very serious side effects of drug therapy.

WHAT YOU NEED TO KNOW

Lowering Uric Acid Levels

- High uric acid concentrations can deposit crystals in joints and tissues, triggering the excruciating pain of gout, which is linked to greater risks of cardiovascular disease and mortality.
- Drug treatment for gout may cause serious side effects such as breathing difficulties, unusual bleeding, and vomiting, and these drugs may interfere with other medications.
- In a landmark human trial, scientists demonstrated the effectiveness of *Terminalia bellerica*, which reduces serum uric acid buildup without reported side effects. This extract appears to inhibit xanthine oxidase, an enzyme involved in the synthesis of uric acid.
- Twice-daily capsules of **500 mg** of *T. bellerica* extract decreased uric acid levels by a mean of **27.59%**, without adverse side effects.

Uric Acid Reduction in a Landmark Clinical Trial

Scientists conducted a well-designed, long-term human study to compare the effectiveness of extracts from the fruits of two different species of the *Terminalia* tree with each other and with a drug commonly used to treat hyperuricemia.[8]

In this randomized, double-blinded, placebo-controlled, parallel-group study, 110 volunteers with hyperuricemia were divided into five separate groups and evaluated over 24 weeks. Their uric acid levels, other health indicators, and side effects were assessed before treatment and at follow-up visits at four weeks, eight weeks, 12 weeks, 16 weeks, 20 weeks, and 24 weeks of therapy. In other words, at each visit, they were evaluated for both efficacy and safety.

Safety, a key element of the study due to the potentially deadly side effects of all the drug options for hyperuricemia, was assessed both by patient questioning at each of the six visits and by a thorough lab analysis of hematological, hepatic, and renal biochemical parameters at the outset and at 24 weeks. Each participant was given a contact number for reporting and accessing medical help with regard to any potentially adverse event.

The hyperuricemic patients were randomized into five groups, which included:[8]

- Group 1: *Terminalia chebula*—one capsule of **500 mg** taken orally twice daily after food,
- Group 2: *Terminalia bellerica*—one capsule of **500 mg** taken orally twice daily after food,
- Group 3: *Terminalia bellerica*—one capsule of **250 mg** taken orally twice daily after food,
- Group 4: *Febuxostat* (Uloric)—one tablet of **40 mg** taken orally in the morning after food plus an identical placebo capsule taken in the evening after food, and

- Group 5: Placebo capsules—one capsule taken orally twice daily after food.

After 24 weeks, the researchers analyzed the data to measure the effectiveness of the two *Terminalia* extracts relative to each other, to the drug, and to placebo—and to directly relate that effectiveness to the degree of safety of each. They paid particular attention to the percentage of patients in each group whose uric acid levels were reduced to the healthy target of **6.0 mg/dL**.

WHAT YOU NEED TO KNOW

A Side Effect-Free Option for Hyperuricemia

The research team recorded an average reduction in uric acid levels at each of the six follow-up visits for all treatment groups except the placebo group, which showed an erratic but overall *increase* in uric acid over the 24 weeks.

The average absolute **uric acid** readings decreased over the course of the study by:[8]

- **1.34 mg/dL** in the **500 mg** *Terminalia chebula* group,
- **2.29 mg/dL** in the **500 mg** *Terminalia bellerica* group,
- **1.17 mg/dL** in the **250 mg** *Terminalia bellerica* group, and
- **4.25 mg/dL** in the **40 mg** febuxostat drug group.

Expressed as mean percentage decreases in uric acid over 24 weeks, levels decreased by:[8]

- **16.02%** in the **500 mg** *Terminalia chebula* group,
- **27.59%** in the **500 mg** *Terminalia bellerica* group,
- **14.05%** in the **250 mg** *Terminalia bellerica* group, and
- **48.79%** in the **40 mg** febuxostat drug group.

The percentage of patients who achieved the target serum uric acid level of **6 mg/dL** or less at the end of 24 weeks was:[8]

- **22.2%** in the **500 mg** *Terminalia chebula* group,
- **88.8%** in the **500 mg** *Terminalia bellerica* group,
- **11.76%** in the **250 mg** *Terminalia bellerica* group, and
- **100%** in the **40 mg** febuxostat drug group.

Clearly, almost nine out of 10 volunteers who took **500 mg** of *T. bellerica* twice daily achieved the target uric acid level of **6 mg/dL**, while just over two out of 10 patients who took an equal dose of *T. chebula* reached this goal. A full 10 out of 10 subjects who took the drug febuxostat realized the target of **6 mg/dL**, but the drug option has known serious and potentially lethal adverse effects that are difficult to identify in a 24-week trial.

However, early adverse effects from this drug were observed even within the period of the study.[8]

At the beginning of this clinical study, all volunteers' hematological and biochemical parameters were within normal limits for all treatment groups. But of the 18 patients in the febuxostat group, two completed the study with elevated total bilirubin and one patient complained of nausea and vomiting. (Bilirubin is the yellow byproduct of heme breakdown, and elevated levels may indicate certain diseases.) One patient in the *T. chebula* group had mild gastrointestinal intolerance. Notably, not one of the patients in the *T. bellerica* groups had any adverse effect at all.[8]

These safety findings are in line with earlier research that found no signs of toxicity in male and female rats given massive doses of *T. bellerica* ranging from **300** to **5,000 mg** per kilogram of body weight.[24,25]

This human trial demonstrates that **500 mg** of ***Terminalia bellerica*** twice daily significantly reduces uric acid levels, without the attendant long-term risks of febuxostat drug therapy.

Additionally, *Terminalia bellerica* is a safe alternative that is available without prescription to anyone experiencing elevated uric acid levels—that is anyone wishing to block gout before it develops.

By contrast, the manufacturer of **febuxostat** stipulates that this potentially risky drug is "…*used to lower blood uric acid levels in adults with gout*" and that "… *it is not for the treatment of high uric acid without a history of gout.*"[26]

WHAT YOU NEED TO KNOW

Summary

Affecting 8.3 million Americans, gout is caused by high concentrations of uric acid in the body that lead to the creation of crystals in joints and tissue and excruciating pain. Gout is associated with higher risks of cardiovascular disease and mortality.

Drugs available to reduce uric acid levels come with side effects that include breathing difficulties, unusual bleeding, vomiting, nausea, and severe rash. They may also interfere with other medications.

In a fascinating human trial, scientists recently demonstrated the effectiveness of ***Terminalia bellerica***, a natural Ayurvedic alternative with no reported side effects, to reduce serum **uric acid**. This tannin-rich extract appears to inhibit *xanthine oxidase*, an enzyme involved in uric acid synthesis.

In volunteers with elevated uric acid levels, twice-daily capsules of **500 mg** of *T. bellerica* extract decreased uric acid levels by a mean of **27.59%**, with absolutely no adverse side effects.

This decrease in uric acid levels enabled **88.8%** of the people in the study arm taking the extract to achieve targeted uric acid serum levels.

Comprehensive **blood test** panels that most Life Extension® supporters have performed annually reveal **uric acid** levels. An ideal uric acid range is slightly less than **6 mg/dL**.

If you have any questions on the scientific content of this article, please call a **Life Extension®** Wellness Specialist at 1-866-864-3027.

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