

Summaries for Patients are a service provided by *Annals* to help patients better understand the complicated and often mystifying language of modern medicine.

The full report is titled “Effectiveness of Leech Therapy in Osteoarthritis of the Knee. A Randomized, Controlled Trial.” It is in the 4 November 2003 issue of *Annals of Internal Medicine* (volume 139, pages 724-730). The authors are A. Michalsen, S. Klotz, R. Lütke, S. Moebus, G. Spahn, and G.J. Dobos.

Leeches To Treat Knee Osteoarthritis

What is the problem and what is known about it so far?

Knee osteoarthritis (“arthritis”) is a common condition in which changes in the knee joints lead to pain and disability. Typical treatments for knee osteoarthritis include oral or topical medicines to decrease pain and inflammation; knee injections with pain relievers or steroids; exercise; and, in severe cases, surgical replacement of the knee. Unfortunately, typical treatments often provide little or no relief. Leeches have been used for medical purposes since ancient times with varying success. Leeches attach to mammals and feed on their blood. Leech saliva contains many substances that could be responsible for their therapeutic effects. Various substances, including hirudin, decrease inflammation. Since inflammation is responsible for the symptoms of osteoarthritis, researchers believe that leeches might relieve pain in patients with osteoarthritis.

Why did the researchers do this particular study?

To compare leech therapy with a more conventional therapy for knee osteoarthritis.

Who was studied?

51 patients 40 years of age or older with knee osteoarthritis and a high pain rating on a standard osteoarthritis questionnaire. To participate in the study, patients could not have had knee injections within the previous 3 months of entering the study or knee surgery at any time.

How was the study done?

The researchers assigned patients at random to receive either leech therapy or treatment with diclofenac gel. The leech therapy patients had 1 treatment session during which the researchers applied 4 to 6 leeches to the affected knee. The leeches stayed on the knee until they detached themselves (about 70 minutes), and then patients rested the knee for 12 hours. The researchers instructed the diclofenac group to apply the gel to the affected knee at least twice a day. Patients could use other oral osteoarthritis medicines as needed. After 3, 7, 28, and 91 days, the researchers measured patients’ pain, stiffness, and function by using standard questionnaires.

What did the researchers find?

Patients receiving leech therapy reported less pain than patients receiving diclofenac at day 7, but both groups reported similar amounts of pain after day 7. However, patients who received leech therapy reported less stiffness, better function, and fewer total arthritis symptoms through the full 91 days that the researchers followed them.

What were the limitations of the study?

Patients knew whether they were getting leeches or diclofenac, and knowledge of the treatment may have influenced how they answered questions about osteoarthritis symptoms. Diclofenac is not the most common or most effective osteoarthritis treatment. In addition, arthritis is a chronic condition, but this study lasted only 91 days.

What are the implications of the study?

Leeches show promise as an osteoarthritis treatment. However, future studies must compare leeches (or their saliva) with various typical arthritis treatments over a longer period. Ideally, future studies would be designed so that patients did not know which treatment they were getting.