

# Bone Morphogenic Protein Aids Lumbar Fusion

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PHILADELPHIA — Recombinant human-bone morphogenic protein-2 was more effective than an autologous iliac crest bone graft for facilitating lumbar fusion in a randomized study with 47 patients.

The results of the study showed “several improvements in lumbar fusion procedures provided by the use of rhBMP-2 as a replacement for an autologous iliac crest bone graft,” J. Kenneth Burkus, M.D., and his associates said in a poster at the annual meeting of the North American Spine Society.

The study was sponsored by Medtronic Sofamor Danek. Dr. Burkus is a consultant to the company, which makes rhBMP-2 under the trade name Infuse Bone Graft. This material has not received approval from the Food and Drug Administration.

The study enrolled patients with symp-

tomatic, single-level lumbar spondylosis. The patients underwent anterior lumbar discectomy and interbody fusion using threaded, cortical allografts. The surgeries were done at one of five participating centers. Patients were randomized, with 23 treated with an autologous, iliac-crest bone graft and 24 treated with rhBMP-2 on a collagen sponge carrier. The demographic profile and medical histories of patients in the two groups were similar.

After 48 months of follow-up, patients

treated with rhBMP-2 consistently had better clinical outcomes than the controls.

The Oswestry low-back pain disability questionnaire score improved by an average of 23.9 points among patients in the rhBMP-2 group vs. an average drop of 18.5 points among the control patients, reported Dr. Burkus, an orthopedic surgeon at the Hughston Clinic in Columbus, Ga.

The physical component score of the short form (SF)-36 improved by a mean of 10.3 points among patients treated with

rhBMP-2 and by 4.4 points in those who received an iliac-crest graft.

After 48 months, 78% of patients in the rhBMP-2 group were working, compared with 41% in the control group. And 94% of patients in the rhBMP-2 group showed evidence of lumbar interbody fusion after 48 months vs. 71% of the control patients.

There was no clinical or radiologic evidence that any patient had degeneration in a segment adjacent to the one that was fused, he reported in the poster. ■

## Discectomy Found Favorable Five Years Out

PHILADELPHIA — Patients do “quite well” both mentally and physically 5 years following lumbar discectomy, based on follow-up of 53 patients.

Lumbar discectomy has become one of the most common spinal, surgical procedures in the United States, William C. Welch, M.D., said at the annual meeting of the North American Spine Society.

“Remarkably, this is the first study to show positive, 5-year outcomes on a number of important biopsychosocial variables,” said the chief of neurologic surgery and spine services at the University of Pittsburgh.

The study included a sample of patients aged 18 or older who had a first discectomy done at any of eight medical centers in the United States during January 1997–March 1999. Questionnaires and surveys were sent to each patient.

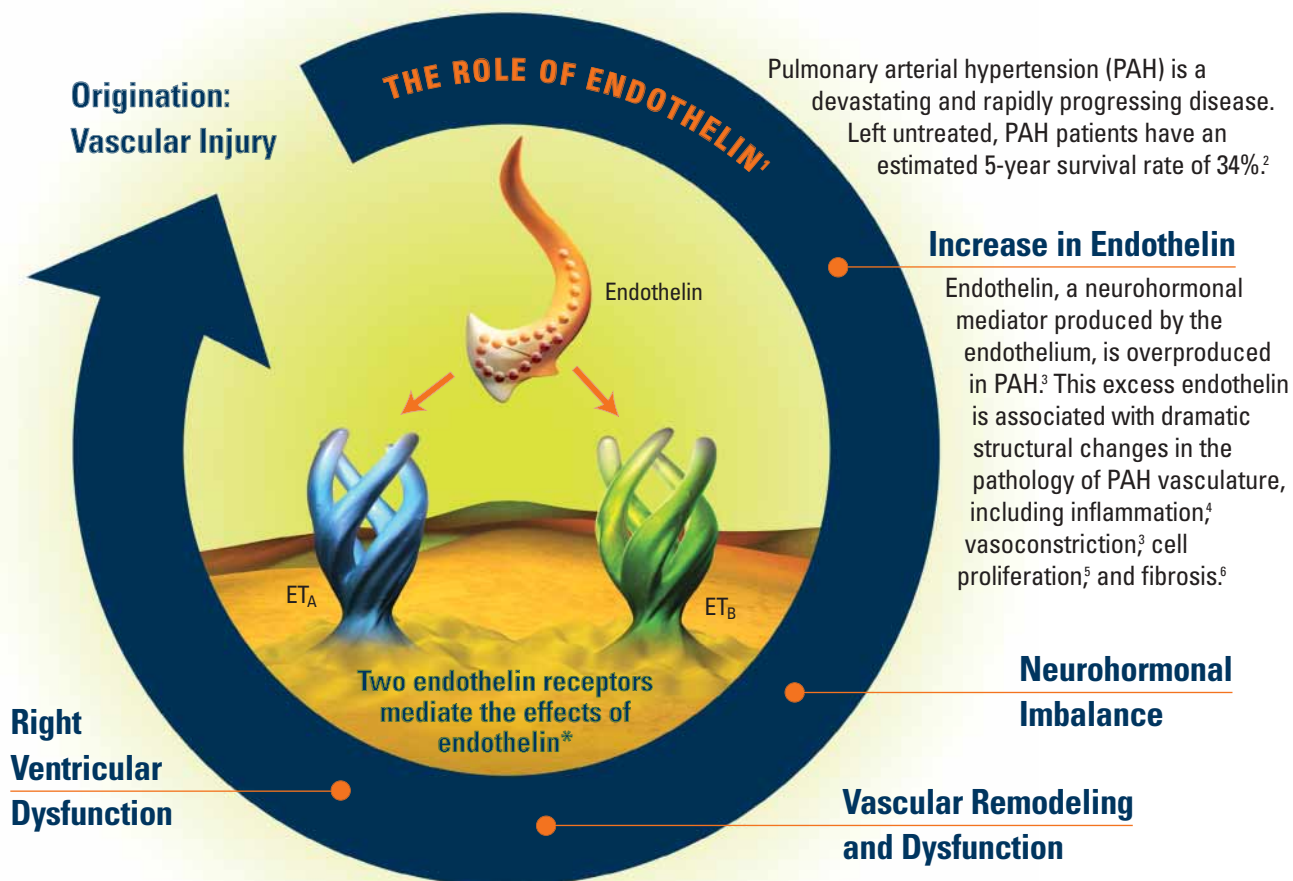
Overall, the scores showed the patients were doing well with little disability and were satisfied with their outcomes. None of the questionnaire results were significantly different from normative values, said Dr. Welch, professor of neurologic and orthopedic surgery at the university.

For example, the average physical component scale score on the Short Form-12 questionnaire was 42.47, and the mental component score was 53.47, both in the normal range. The average treatment helpfulness questionnaire score was 49.8 on a scale where 50 indicates good, overall satisfaction. The average Pain Disability Questionnaire score was 21.1, in a range where 0 indicates no problem and 150 indicates the greatest severity.

The rate of repeat surgery at the same disk level was 9.8%, a rate that’s “fairly high,” Dr. Welch said.

—Mitchel L. Zoler

## Endothelin's Role in the Rapid Progression of Pulmonary Arterial Hypertension



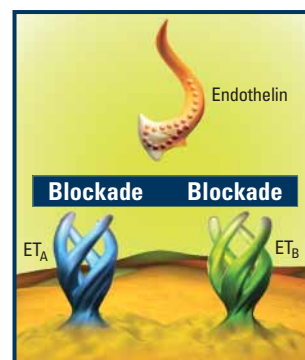
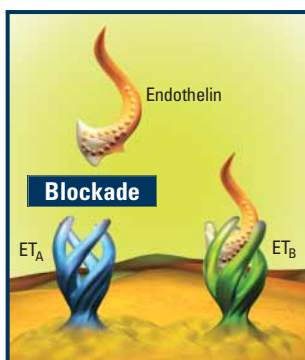
### Blockade of Both ET<sub>A</sub> and ET<sub>B</sub> Receptors Is Critical

#### ET<sub>A</sub> Activity in PAH\*

Cell proliferation<sup>5</sup>  
Vasoconstriction<sup>2</sup>  
Inflammation<sup>4</sup>

#### ET<sub>B</sub> Activity in PAH\*

Cell proliferation<sup>5</sup>  
Vasoconstriction<sup>2</sup>  
Inflammation<sup>4</sup>  
Fibrosis<sup>6</sup>  
Hypertrophy<sup>6</sup>



To learn more about the effects of endothelin in pulmonary arterial hypertension, please visit [www.endothelinscience.com](http://www.endothelinscience.com)

\*Statements are based on observations reported from in vitro or animal trials.

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