

News

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**New England Journal story shows reversal
in diabetic capillaries in leg muscle
samples.

DALLAS--For the first time a reversal in the thickening of capillaries in insulin pump patients has been recorded. Dr. Phillip Raskin and associates at The University of Texas Health Science Center at Dallas reported their findings in an article published Dec. 22 in The New England Journal of Medicine. Raskin is associate professor of Internal Medicine.

In their two-year study 13 pump patients achieved normal or near-normal levels of blood sugar using an experimental treatment program combining constant infusion of insulin by portable pump, dietary management and self monitoring of blood glucose. These patients experienced a reversal in the width of skeletal-muscle capillary basement membranes in the thigh. The capillary basement membrane is the inside layer of the capillary wall.

There was no change in the basement membrane with 10 other diabetic patients receiving a more conventional diabetic treatment that included insulin injections, generally twice daily, and dietary advice. Their diabetic condition, however, remained stable.

Thickening of the capillary basement membrane is characteristic of diabetic complications. These thickening membranes are found in the eyes and kidney sites of serious complications in many patients suffering from the disease. The lesions are also found in the skeletal muscles of many patients. Samples for the study were taken from the right quadriceps.

"If changes in the capillaries in skeletal muscle parallel those in the capillaries in renal or renal tissue, then meticulous control of blood glucose, or sugar, may be beneficial over a long period of time in preventing the microvascular complications of diabetes," says Raskin. "However, what these findings mean to the eye, such as diabetic retinopathy, and the kidney is not clear as yet. We hope the same reversal could occur in these organs that cause so many complications in patients. But so far other kidney and eye studies have not shown improvement. Perhaps, however, studies of longer duration may show a parallel tendency."

Currently Raskin has 30 long-term patients receiving treatment for diabetes mellitus by the insulin infusion pump. This number is a large patient load for physicians working with pump patients on an individual basis. Raskin and his health care team, which includes other physician/researchers, two research nurses and a dietitian, are currently seeing a total of 40 pump patients. Two of the researchers' patients will celebrate their fifth year on the pump in June 1984.

Dr. W. Allen Shannon Jr., assistant professor of Cell Biology, did the electron microscopy required for the measurement of the basement membranes. Other UTHSCD researchers participating in the reported study are Drs. Angel O. Pietri and Roger H. Unger, also of Internal Medicine.

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