

Ankle-Brachial Index Predicts Renal Dysfunction in PAD

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VIENNA — The ankle-brachial index predicted the risk of progression to end-stage renal disease, and declines in the index over time were linked to an increased risk for death, cardiovascular events, and end-stage renal disease, all in patients with peripheral artery disease treated at one center.

The results also showed that treatment with either a statin or an ACE inhibitor was effective for slowing progression to end-stage renal disease in patients with peripheral artery disease (PAD), Dr. Harm H.H. Feringa said at the annual congress of the European Society of Cardiology.

Data were collected from 1,940 patients with PAD and an ankle-brachial index (ABI) of less than 0.90 who were examined at Erasmus Medical Center in Rotterdam, the Netherlands, during 1988-2006. The average age of the patients was 64 years, the average ABI was 0.71, and the series excluded patients on dialysis. An ABI of 0.70 or less was measured in 72% of patients at baseline, and the average estimated glomerular filtration rate (GFR) was 78 mL/min per 1.73 m². At baseline, 22% of patients had a GFR of 30-59 mL/min per 1.73 m², indicating moderately reduced kidney function, 3% had a GFR of 15-29 mL/min per 1.73 m² (severely reduced kidney function), and 2% had a GFR of less than 15 (renal failure). Median follow-up was 8 years.

During that time, 30% of the patients had worse renal function, 23% had a drop in their GFR of more than 25 mL/min per 1.73 m², and 10% of the patients progressed to renal failure, while 40% had improved renal function, reported Dr. Feringa of the University of Rotterdam.

Patients with lower ABI values at baseline had an increased risk of greater progression of renal disease at the end of follow-up. In a multivariate analysis that controlled for other baseline variables, every 0.1 reduction in ABI at baseline was linked with a 34% increased risk of progression to renal failure during follow-up.

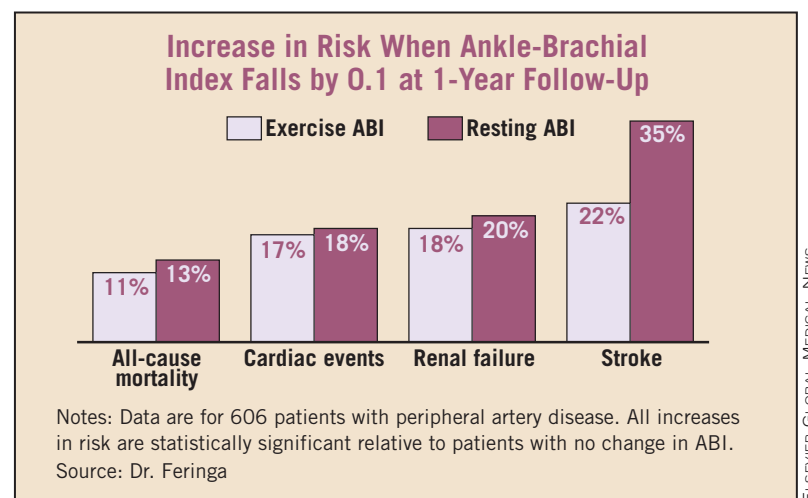
In the same analysis, treatment with agents from either of two drug classes was linked with a reduced risk for progression to renal failure: Treatment with a statin was associated with a 59% reduced risk, and treatment with an ACE inhibitor was linked with a 25% reduced risk.

The second study involved 606 patients with PAD who were treated at Erasmus during 1996-2005. Their ABIs at rest and after exercise were measured at baseline and after 1 year of follow-up. The patients' average age was 62 years, and their mean resting ABI at baseline was 0.69. Patients were followed for an average of 5 years, during which time they were tracked for all-cause death, which occurred in 14%; cardiac events, 6%; stroke, 8%; and progression to renal failure, 6%. Cardiac deaths accounted for about half of all deaths.

During the first year of follow-up, resting and exercise ABI each fell in about 75% of patients. Significant predictors of a

drop in ABI included age, smoking, diabetes, and a history of stroke or myocardial infarction.

A multivariate analysis that controlled for baseline differences in age, gender, smoking, hypertension, diabetes, and other factors showed statistically significant correlations between the decline in ABI over a 1-year period, both at rest and after exercise, and an increased incidence of each of the bad outcomes tallied during follow-up, Dr. Feringa said (see chart). ■



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References: 1. Gross L. Metaxalone: a review of clinical experience. *J Neurol Orthop Med Surg.* 1998;18(1):76-79. 2. Dent RW Jr, Ervin DK. A study of metaxalone (Skelaxin) vs. placebo in acute musculoskeletal disorders: a cooperative study. *Curr Ther Res Clin Exp.* 1975;18(3):433-440.