SURGERY

Revascularization may not benefit renal artery stenosis

Atherosclerotic renal artery stenosis is associated with cardiovascular disease and a high rate of mortality. Evidence as to whether revascularization has any advantage over medical therapy in atherosclerotic renovascular disease is, however, limited. The ASTRAL investigators now report that implementing revascularization and medical treatment in patients with relatively asymptomatic atherosclerotic renal artery stenosis is associated with no meaningful improvements compared with medical treatment alone.

> "[In relatively asymptomatic patients] revascularization ... seems to offer no benefits over medical treatment..."

806 patients were included in this multicenter, randomized, unblinded trial. Patients were eligible if they had substantial atherosclerotic stenosis in at least one renal artery and if, in their physician's judgment, the potential benefits of revascularization were uncertain. Participants were randomly assigned to receive medical therapy plus revascularization or medical therapy alone. The medical therapy regimes were not specified centrally but were decided by local practitioners and implemented according to local protocols. "This study design was meant to reflect normal clinical practice", says Philip Kalra, study co-author and Honorary Professor in Nephrology in Manchester, UK.

Participants underwent regular follow-up visits for up to 5 years (mean 34 months). No significant between-group difference was observed in renal function, as measured via the mean slope of the reciprocal of the serum creatinine concentration. Blood pressure decreased in both groups, and no significant difference in systolic blood pressure was evident. However, diastolic blood pressure decreased at a slightly faster rate in patients receiving only medical therapy than in those receiving revascularization plus medical therapy. The incidence of renal and cardiovascular events and the rates of survival did not differ between groups. Serious complications resulting from revascularization occurred in 23 of 280 patients (8.2%) for whom data on adverse events in the first month of follow-up were available.

The researchers conclude that, in those patients with atherosclerotic renal artery stenosis for whom the potential benefits of revascularization are uncertain, revascularization plus medical treatment seems to offer no benefit over medical treatment alone and is associated with potentially serious adverse events. Kalra and colleagues believe that the characteristics of the participants in their study are similar to those of a large proportion of patients undergoing revascularization in countries such as the US.

"The challenge is now to identify the minority of patients with atherosclerotic renal stenosis who may benefit from revascularization", Kalra concludes. His research group is investigating preliminary evidence that kidneys larger than expected for a given glomerular filtration rate are a sign that a patient with atherosclerotic renal artery stenosis might benefit from revascularization.

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