



Synopsis

BioImpedance Spectroscopy to maintain Renal Output: the BISTRO randomised controlled trial

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Plain language summary

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Plain language summary

Why did we do this trial?

Usually, people starting haemodialysis treatment still have some of their own kidney function. Keeping this going for as long as possible brings benefits, including fewer symptoms and better quality of life. We wanted to know if using a device called bioimpedance, which measures the amount of fluid in the body, can help decide how much fluid should be removed during a dialysis session, as avoiding removing too much might slow down the loss of remaining kidney function.

What did we do?

We undertook a trial in which we compared two approaches to deciding how much fluid should be removed during a dialysis treatment. In both groups, clinicians used a checklist of things they should consider when making this decision, and in one group, they also had an estimate of the body fluid content from the bioimpedance device. We enrolled 439 patients from half of United Kingdom dialysis centres and measured their decline in kidney function, blood pressure, symptoms, quality of life and use of health services over the next 2 years.

What did we find?

There was no difference between the groups in the decline of kidney function, blood pressure or symptoms. In both groups, the speed of kidney function loss was half what we anticipated, with one quarter losing it by 2 years, rather than 1 year as expected. There was significant uncertainty in estimating any cost saving and the quality-adjusted life-years experienced by patients. Better preservation of kidney function was associated with better survival.

What does this mean?

Remaining kidney function when starting dialysis is better maintained than previously thought, possibly because much greater attention was paid to it. Using bioimpedance did not benefit the loss of kidney function, but it was not harmful and may have other small advantages.

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This article

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