Withdrawal of renin-angiotensin system inhibitors' effect on estimated glomerular filtration rate in adults with advanced kidney disease: the STOP-ACEi RCT

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Plain language summary

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Drugs called angiotensin-converting enzyme inhibitors or angiotensin receptor blockers, together known as renin–angiotensin system inhibitors, are used to treat high blood pressure, slow worsening kidney function and lower the risk of kidney failure (known as end-stage kidney disease which requires treatment with dialysis or kidney transplantation) in patients with early chronic kidney disease. However, we did not know if patients treated with renin–angiotensin system inhibitors and who have progressed to more advanced chronic kidney disease (stage 4 or 5) should stop or continue renin–angiotensin system inhibitors.

To determine whether stopping renin–angiotensin system inhibitors in people with advanced chronic kidney disease leads to an improvement or stabilisation of kidney function required a study comparing the outcomes of people who had had these drugs stopped with a group who continued these drugs (the STOP-angiotensin-converting enzyme inhibitors trial). We recruited 411 participants with advanced chronic kidney disease who were receiving renin–angiotensin system inhibitors from 37 kidney units in the UK, and randomly (like flipping a coin) allocated them to either stop or continue renin–angiotensin system inhibitors.

We then compared kidney function between the two groups at 3 years. We also assessed whether stopping or continuing renin–angiotensin system inhibitors had an influence on the development of end-stage kidney disease or need for kidney replacement therapy, the number of hospitalisations, blood pressure, quality of life and physical function. We collected data on safety outcomes including death and heart-related events (such as heart attacks).

The results of the trial showed no difference in kidney function at 3 years. The number of participants requiring dialysis, or a kidney transplant was also similar, as was the quality of life and physical function between the groups. Deaths and the number of heart events were similar in both groups.

This research suggests that there is no benefit in stopping renin–angiotensin system inhibitors in patients with advanced chronic kidney disease.

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