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## When or if to re-start ACEI, ARB, diuretics and other antihypertensive drugs after an episode of Acute Kidney Injury

During acute illness, particularly involving sepsis, hypovolaemia or hypotension, renal blood flow is often reduced, resulting in Acute Kidney Injury (AKI). Clinicians managing patients with AKI therefore frequently stop drugs that lower blood pressure (particularly ACEI and ARBs, which selectively reduce glomerular pressure) and diuretics. ACEIs, ARBs and potassium-sparing diuretics may also be stopped because of hyperkalaemia. This document gives guidance on when these drugs should be re-started after an episode of AKI.

1. The original indication for the use of the drug should be reviewed.
2. If a specific contraindication to the use of an ARB/ACEI has been identified (e.g. severe bilateral renal artery stenosis), an alternative drug should be used.
3. For patients previously stabilized on drugs for the treatment of heart failure, these drugs should be re-started as soon as clinically reasonable, and re-titrated to achieve the best control of fluid balance and blood pressure, unless there is a specific contraindication. These medicines will often be recommenced in the hospital setting before discharge but will require titration in the community to get an optimal effect. In general, if the patient is under the continuing care of a specialist heart failure service, then that service should be involved in this drug titration; otherwise, the GP can take responsibility.
4. Follow existing guidelines to identify high-risk patients whose ACEI or ARB should be re-started in secondary care.
5. Patients previously stabilized on ACEI or ARB for chronic kidney disease with albuminuria (diabetes with albumin:creatinine ratio  $> 3$  mg/mmol; hypertension with albumin:creatinine ratio  $> 30$  mg/mmol; albumin:creatinine ratio  $> 70$  mg/mmol irrespective of hypertension or cardiovascular disease) should be re-started on these drugs unless there is a new contra-indication, for instance pre-treatment serum potassium  $> 5$  mmol/L (NICE CG182).



6. For patients previously stabilized on drugs for the treatment of essential hypertension, the episode of AKI should prompt review of the antihypertensive strategy. All patients should attend their GP's surgery for review within 6 weeks of discharge. Blood pressure should be re-checked, ideally with home or ambulatory blood pressure monitoring, to inform decisions about whether resumption of antihypertensive therapy is required.
  - a. For patients previously stabilized on a single BP-lowering drug, therapy should be brought into line with NICE/BHS guidance CG127 as applied to patients being started on BP-lowering treatment:
    - i. Patients over the age of 55 and black people of African or Afro-Caribbean family origin should be offered a calcium channel blocker as first line treatment, even if they were previously stabilized on an ACEI or ARB.
    - ii. All other patients previously on an ACEI or ARB for hypertension should be re-started on their original drug treatment unless they have serum potassium  $> 5$  mmol/l, or are at risk of recurrent hypovolaemia (e.g. high volume ileostomy) in which case alternatives should be considered. Serum creatinine and potassium should be re-measured 1-2 weeks after re-starting and any subsequent dose titration, as for use in other settings.
  - b. If a patient is left off treatment (for instance, if clinic BP is  $<140/90$  or home BP  $<130/85$ ), further follow-up should be offered for at least 12 months, as it may take some time for blood pressure to return to previous levels after recovery from acute illness.
7. All of the above should be applied in a holistic manner, taking into account the overall functional status of the patient. As in other settings, patients and carers should be involved in decisions about drug treatment and given the best available information about the risks and benefits of each option.

For more information on AKI and for resources on its prevention, detection, treatment and management created specifically for primary care visit <https://www.thinkkidneys.nhs.uk/aki/resources/primary-care>

Think Kidneys is a national programme from the UK Renal Registry in partnership with NHS England

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