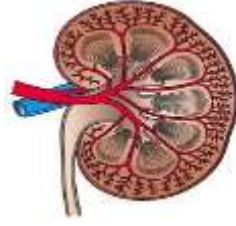


Prescribing medicines in renal impairment

Prescribing tip for information



The Medicines and Healthcare products Regulatory Agency (MHRA) have published [guidance](#) on the prescribing of medicines in renal impairment.

Estimated glomerular filtration rate (eGFR) and creatinine clearance (CrCl) are two estimates of renal function available to prescribers. It is recognised that for the majority of patients and medicines, estimated Glomerular Filtration Rate (eGFR) is an appropriate measure of renal function for determining dosage adjustments in renal impairment.

However, eGFR can overestimate renal function compared to CrCl in some patient groups or clinical situations. This overestimation can result in patients receiving higher than recommended doses of their medication in respect of their renal function. In particular, the use of eGFR for dosing of DOACs is known to increase the risk of bleeding events as a consequence of overestimating renal function.

In these circumstances, the Cockcroft-Gault formula (CG) should be used to calculate creatinine clearance (CrCl) and dosage adjustments would then be based on this indicator of renal function. Applications such as [MDCalc](#) can be used when calculating the Cockcroft-Gault CrCl value. Extremes of body mass present another complexity in dosing of DOACs. There are limited data on appropriate dosing in such patients and the CG equation may not be accurate for estimation of CrCl at extremes of bodyweight especially in obese patients. If unsure always seek specialist advice. Specific guidance on the dosing of DOACs in renal impairment can be found [here](#) and [here](#).

Advice for prescribers

CrCl should be calculated using the Cockcroft-Gault (CG) formula to determine dosage adjustments for

- Direct-acting oral anticoagulants (DOACs ; apixaban, dabigatran etexilate, edoxaban and rivaroxaban)
- Patients taking nephrotoxic drugs (including vancomycin and amphotericin B)
- Elderly patients (aged 75 years and older)
- Patients at extremes of muscle mass (BMI < 18 kg/m² or > 40 kg/m²)
- Patients taking medicines that are largely renally excreted and have a narrow therapeutic index, such as digoxin and sotalol.

When dose adjustment based on CrCl is important and no advice is provided in the relevant BNF monograph, consult the [summary of product characteristics](#). Reassess renal function and drug dosing in situations where eGFR and/or CrCl change rapidly such as in patients with acute kidney injury (AKI).

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