DOAC Dosing for Atrial Fibrillation (AFib)

**PROBLEM**

- Inappropriate dosing of direct oral anticoagulants (DOACs) is not uncommon in treating AFib patients.
- Nearly 60% of reduced-dose DOAC regimens do not follow Food and Drug Administration (FDA) recommendations.
- Inappropriate dosing may be associated with increased risk for cardiovascular hospitalization and/or adverse events like bleeding and all-cause mortality.
- Underdosing of DOACs may increase stroke risk, while not reducing rates of major bleeding.

**SOLUTION**

When prescribing DOACs for AFib patients, clinicians should adjust DOAC dose based on FDA prescribing guides summarized in Treatment Table.

### Treatment Table: DOAC Dosing Recommendations in AFib

<table>
<thead>
<tr>
<th></th>
<th>Apixaban</th>
<th>Dabigatran</th>
<th>Edoxaban</th>
<th>Rivaroxaban</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usual Dose</strong></td>
<td>5mg BID</td>
<td>150mg BID</td>
<td>60mg daily (CI if CrCl ≥95 mL/min)*</td>
<td>20mg daily with food</td>
</tr>
<tr>
<td><strong>Reduced Dose</strong></td>
<td>2.5mg BID</td>
<td>75mg BID</td>
<td>30mg daily</td>
<td>15mg daily with food</td>
</tr>
</tbody>
</table>
| **Indications for Reduction** | 1. If 2 of 3 factors present:
- Age ≥80 years
- SCr ≥1.5 mg/dL
- Weight ≤60 kg
2. Coadministered with combined P-gp and strong CYP3A4 inhibitors (e.g., ketoconazole, itraconazole, ritonavir) | CrCl 15-30 mL/min OR, CrCl 30-50 mL/min concomitant dronedarone or ketoconazole | CrCl 15-50 mL/min | CrCL ≤ 50 mL/min |
| **Comments** | Those with SCr >2.5 or CrCl <25 mL/min excluded from ARISTOTLE trial† | Those with CrCl <30 mL/min excluded from RE-LY trial† | Those with CrCl <30 mL/min excluded from ENGAGE AF-TIMI 48 trial† | Those with CrCl <30 mL/min excluded from ROCKET-AF trial† |

Consult package inserts for specific use/dosing recommendations with concomitant CYP3A4 and/or P-gp inducers or inhibitors. There are additional drug interactions in which DOACs should be avoided.

**BID**: twice daily; **SCr**: actual serum creatinine; **P-gp**: P-glycoprotein; **CYP3A4**: cytochrome P450 3A4; **CrCl**: creatinine clearance calculated with Cockcroft-Gault equation using actual body weight and actual SCr; **CI**: contraindicated.

* Contraindicated if CrCl > 95 mL/min due to increased ischemic stroke risk compared to warfarin.
† Use in these situations based on kinetic and dynamic modeling rather than clinical outcomes data.

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**Prevent Potential Errors**

- Implement functional hard-stop drug alerts during order entry in electronic medical record.
- Establish an anticoagulant management service program.
- Adopt continuous education programs for all providers on proper DOAC dosing strategies.
- Create pocket cards for a quick reference on DOAC prescribing.

To download the infographic and see citations visit [ACC.org/Infographics](http://ACC.org/Infographics)