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| **TITLE:** Emory Transplant Center Kidney/Pancreas Direct Oral Anticoagulants | |
| **APPLICABLE FACILITIES:** (check all that apply)  □EUH **□**EUOSH □EWWH □EUHM □EJCH □ESJH □TEC □ESA □ERH | |
| **EFFECTIVE DATE:** 5/8/2019 | **ORIGINATION DATE:** 2/17/2016 |

**SCOPE:**

Based on the pharmacological traits of direct oral anticoagulants (DOACs) the Emory

Transplant Center will not perform deceased donor kidney or pancreas transplantation on patients taking DOACs. This includes apixaban (Eliquis®), dabigatran (Pradaxa®), edoxaban (Savaysa®), and rivaroxaban (Xarelto®). While DOACs have FDA approved reversal agents, preemptive use in the setting of surgical procedures, and subsequent thrombosis risk, is not well studied. Substantial, irreversible bleeding during surgery introduces a significant risk to the patient. The therapeutic effects of DOACs cannot be monitored with basic laboratory tests.

**GUIDELINES:**

* **Pre-transplant phase**: If any team member identifies any evaluation patient taking a

DOAC, they will inform the patient and referring provider that the patient will need to be changed to warfarin (Coumadin®) in the event the patient is approved for listing, unless the patient has a living donor. The patient’s anticoagulation, including facilitating monitoring for a therapeutic INR while taking warfarin, will remain the responsibility of the patient’s referring provider or the patient’s primary care provider.

* **Waitlist phase:** If any team member identifies any patient taking a DOAC, the patient will be changed to inactive listing. The patient will need to notify the waitlist team and provide documentation once they have been converted to warfarin, and at that point, the coordinator will change the listing status to active. The patient’s anticoagulation, including facilitating monitoring for a therapeutic INR while taking warfarin, will remain the responsibility of the patient’s referring provider or the patient’s primary care provider.
  + Candidates with a living donor can have their DOAC held prior to their transplantation according to the following recommendations:
    - Apixaban, Rivaroxaban, or Edoxaban: Hold for 4 days
    - Dabigatran: Hold for 6 days
* **Transplant phase**: If a patient is admitted for a deceased donor kidney/pancreas

transplant and identified to be actively taking a DOAC, the patient will be discharged

and the organ offer will pass to the next patient on the waitlist. A Kidney/Pancreas team

member or coordinator will change the listing to inactive. The patient will need to

notify the waitlist team and provide documentation once they have been converted to

Coumadin, and at that point, the listing status will change to active. The patient’s anticoagulation, including facilitating monitoring for a therapeutic INR while taking warfarin, will remain the responsibility of the patient’s referring provider or the patient’s primary care provider.

* + If a patient was recently taking a DOAC but stopped it at least 4 days prior (or 6 days if taking dabigatran), the patient can proceed to transplant.
* **Post-transplant phase**: DOACs can be considered in stable patients based on individual factors, such as renal function, need for procedures (i.e. biopsy) and bleeding/thrombosis risk.
  + If a patient develops the need for a renal biopsy, anticoagulation or antiplatelet agents should be held according to the following recommendations:

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| Agent | Pre-Procedure Recommendations |
| Direct Anticoagulant (DOAC) | |
| Apixaban (Eliquis®) | Hold for 4 days |
| Dabigatran (Pradaxa®) | Hold for 6 days |
| Edoxaban (Savaysa®) | Hold for 4 days |
| Rivaroxaban (Xarelto®) | Hold for 4 days |
| Vitamin K Antagonist | |
| Warfarin (Coumadin®) | Goal INR < 1.5 \*bridging may be warranted  INR < 3: Hold for 5 days  INR ≥ 3: Hold for 7 days |
| Antiplatelet Agents | |
| Aspirin | Hold at least 24 hours \*anti-platelet effect may last 5 days |
| Clopidogrel (Plavix®) | Hold for 5 days |
| Prasugrel (Effient®) | Hold for 7 days |
| Ticagrelor (Brilinta®) | Hold for 5 days |

* + Agents can be resumed 24-48 hours after procedure as long as patient is hemodynamically stable.

**RELATED DOCUMENT(S)/LINK(S):**

**DEFINITIONS:** *(If applicable)*

**REFERENCES AND SOURCES OF EVIDENCE:**

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**KEY WORDS: Anticoagulants, DOAC**