VASCULAR ACCESS

Detection and Management of Clinically Significant AV Access Lesion (Stenosis/Thrombosis)

NATIONAL KIDNEY FOUNDATION®

Key Messages: Clinically Significant Stenosis

- Clinically significant stenosis can be detected by monitoring (abnormalities found on physical exam and/or during dialysis without additional special equipment)
- Confirm by imaging that the reduction in lumen size is >=50% to the adjacent non-stenosed vessel
- Primary treatment is typically endovascular (e.g. angioplasty [PTA])
- Surgical treatment should be considered in situations where endovascular therapy is unlikely to be successful
- As much as possible, avoid endovascular or surgical treatments that may adversely impact cannulation zone or future vascular access options, according to the patient's ESKD Life-Plan

Detect & Confirm a Clinically Significant Lesion

Check if Yes:

A) During physical examination or check

- ☐ **Ipsilateral extremity edema**
- ☐ **Alterations in the pulse, with a weak or resistant pulse, difficult to compress, in the area of stenosis**
- ☐ **Abnormal thrill (weak and/or discontinuous) with only a systolic component in the region of stenosis**
- ☐ **Abnormal bruit (high pitched with a systolic component in the area of stenosis)**
- ☐ **Failure of the fistula to collapse when the arm is elevated (outflow stenosis) and lack of pulse augmentation (inflow stenosis)**
- ☐ **Excessive collapse of the venous segment upon arm elevation**

OR

B) During dialysis

- ☐ **New difficulty with cannulation when previously not a problem**
- ☐ **Aspiration of clots**
- ☐ **Inability to achieve the target dialysis blood flow**

Detect & Confirm a Clinically Significant Lesion – cont.

- ☐ **Prolonged bleeding beyond usual for that patient from the needle puncture sites for 3 consecutive dialysis sessions**
- ☐ **Unexplained (>0.2 units) decrease in the delivered dialysis dose (Kt/V) on a constant dialysis prescription without prolongation of dialysis duration**

OR

C) Other causes have been eliminated

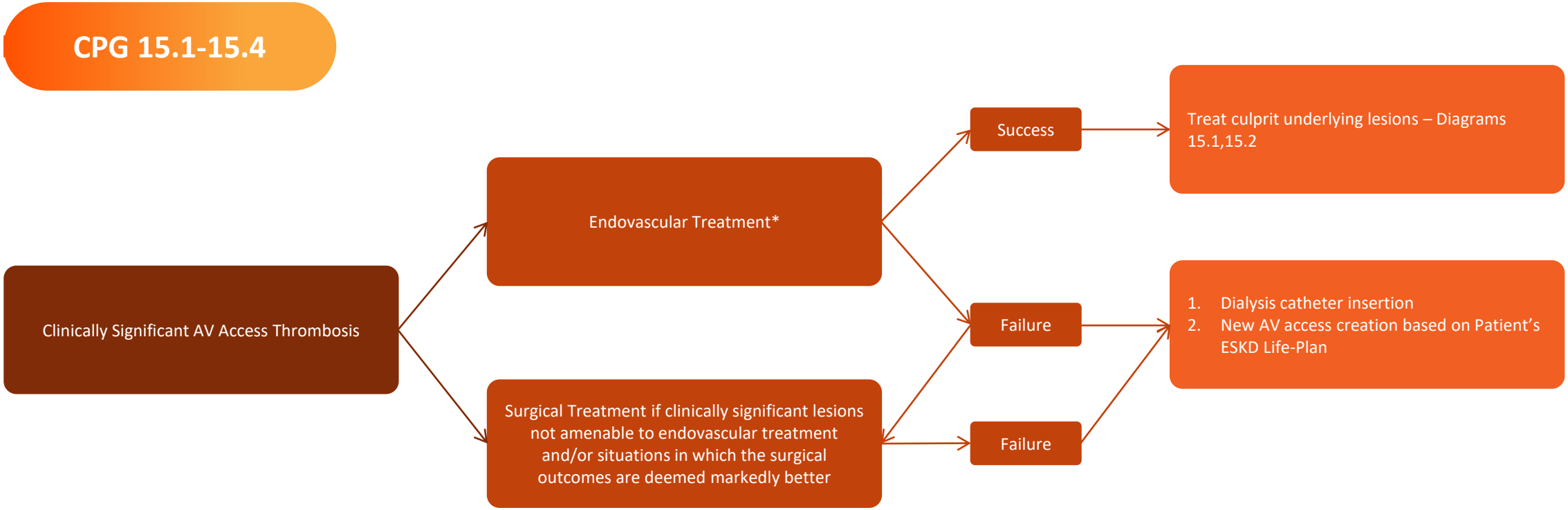
- ☐ **If any of the above has been checked as "yes", other causes of the abnormality besides the vascular access has been ruled out**

If any items from "A" or "B" AND "C" have been checked off, then there is likely a clinically significant lesions.

Next steps:

Confirm by imaging that if the lesion is a stenosis that the reduction in lumen size is >=50% to the adjacent non-stenosed vessel.

Flow Diagram 15
Guideline 15 - AV access Thrombosis



* Use the smallest volume of iodinated contrast or non-iodinated contrast agents (e.g., CO_2 gas) by operators knowledgeable in their uses, contraindications, and risks to obtain the best possible image in all patients with CKD to preserve residual kidney function.

Endovascular Treatment of Clinically Significant Lesion

Angioplasty

- [ ] **Balloon angioplasty first of clinically and angiographically significant lesion**

Stent Graft

Does the patient have the following criteria to use a stent graft?

Mandatory:

- [ ] **Current AV access can be cannulated safely if a stent graft were placed**
- [ ] **The patient's ESKD Life-Plan and subsequent vascular access creation and use would not be negatively impacted by use of a stent graft.**

If above both checked "yes", then are any of the following met considering the benefit may only be up to 6 months:

- [ ] **Recurrent clinically significant graft-vein anastomotic stenosis in AVG**
- [ ] **Recurrent graft-vein anastomotic thrombosis in AVG**
- [ ] **In-stent re-stenosis in AVF and AVG**
- [ ] **Treatment of ruptured venous stenotic segment of AVF and AVG**
- [ ] **Treatment of highly select AV access aneurysm/pseudoaneurysm (see AV access aneurysms section)**

General Treatment of Clinically Significant Stenosis or Thrombosed AV Access

Guideline: 15.4

15.4 KDOQI considers it reasonable to use a careful individualized approach to the treatment of failing or thrombosed AVF and AVG (surgical or endovascular), based on the operator's best clinical judgment and expertise and considering the patient's ESKD Life-Plan. (Expert Opinion)

Note: Consider both the patient's individual circumstances and the operator's clinical experience and expertise (ie, reasonable capabilities and limitations); preferably discussed and agreed on by the team managing the patient's vascular access, including but not limited to the patient and one or more of the following: nephrologist, interventionalist, surgeon, vascular access coordinator, cannulators (nurse or technician).

Angioplasty of Clinically Significant Stenosis

Guideline: 15.5-8

15.5 KDOQI considers it reasonable to use balloon angioplasty (with high pressure as needed) as primary treatment of AVF and AVG stenotic lesions that are both clinically and angiographically significant. (Expert Opinion)

Note: Angiographically present stenosis without accompanying clinical signs and symptoms is inadequate to treat/intervene upon.

15.6 There is inadequate evidence for KDOQI to make a recommendation regarding the use of specialized balloons (drug coated or cutting) versus standard high-pressure balloons in the primary treatment of AVF and AVG stenosis.

15.7 There is inadequate evidence for KDOQI to make a recommendation regarding the optimal duration of balloon inflation time during angioplasty to improve intervention primary patency in the treatment of AVF or AVG stenosis.

15.8 KDOQI considers it reasonable that a careful patient-individualized approach to the choice of balloon type for angioplasty of clinically significant AVF and AVG stenosis be based on the operator's best clinical judgment and expertise. (Expert Opinion)