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Radiology Hemodialysis Procedures

CIRCLE APPROPRIATE CLINICAL INDICATIONS

		AV FISTLAS AND GRAFTS				
		INDICATED TIME TO INTERVENTION				
		Findings	<24 hrs	<48 hrs	<2 weeks	<1 month
INDICATIONS	Flow/Hemodynamics	Access flow: AV fistula		<300 mL/min or > 50% drop from baseline	300 -500 mL/min or > 20% drop from baseline	
		Access flow: AV graft		<500 mL/min or > 50% drop from baseline	500 -650 mL/min or > 20% drop from baseline	
		Blood pump speed (BPS)		<200 mL/min with 15g needle or > 50% drop from baseline	<300 mL/min by week 3 of initiating HD or <350 mL/min for established HD (on 2 consecutive HD runs)	25-50% drop from baseline
		Venous pressure		>80% above baseline (3 consecutive runs)	>125 -150 mmHg using 15-16g needles @ BPS 200 mL/min (3 consecutive runs) or >50% above baseline (3 consecutive runs)	25-50% above baseline (3 consecutive runs)
		Arterial pressure			Less than -220 (e.g., -240) mmHg using 15-16g needles @ BPS 200 mL/min (3 consecutive runs)	
	Dialysis Adequacy	Urea reduction ratio			<66% without other obvious cause	
		KT/V			<1.2 without other obvious cause	
		Uremic symptoms			Present without other obvious cause	
	Physical Findings	Cannulation	Unable to cannulate		Difficult to cannulate	Prolonged bleeding post needle removal
		Arm swelling				AVF or AVG
		Facial swelling		Potential SVC syndrome (acute facial swelling with respiratory compromise)		Non-urgent central vein stenosis
		Pulse/thrill	Loss of pulse/thrill in AVF		<ul style="list-style-type: none"> Significant decrease in thrill/pulse in AVF Clotted AVG (recommend: <5 days) 	
	Clinical Scenarios	Post-op thrombectomy			Fistulogram +/- transonic measure	
		Pre AVF/AVG creation				Ipsilateral arm venography (high risk patients)
		Steal syndrome			Arm arteriogram or CT angiogram based on VA clinic assessment	
		Failure to mature				Fistulogram

		HD CATHETERS			
		INDICATED TIME TO INTERVENTION			
		Findings	24-48 hrs	<48 hrs	<2 weeks
indications	Flow	Blood pump speed (BPS)	<250 mL/min with acute need for dialysis	<250 mL/min with sub-acute need for dialysis	
	Dialysis Adequacy	Urea reduction ratio			<66% without other obvious cause
		KT/V			<1.2 without other obvious cause
		Uremic symptoms			Present without other obvious cause
	Physical Findings	Arm swelling	Acute	Acute	Chronic
		Facial swelling	Potential SVC syndrome		
		Dysfnc catheter/catheter migration/extrusion (line replacement required)		x-ray; replace catheter if required	

Indications and timelines are based on the provincial guideline "Indications & Urgency Criteria for Radiology HD Procedures" (www.bcpra.ca). The guideline was current as of the date on which it was published and was developed using existing standards and evidence for vascular access and chronic kidney disease. The guideline and this indications and timelines tool should be used in conjunction with pertinent clinical data and an assessment of the patient's condition. Approved January 23, 2010