Worcestershire Acute Hospitals NHS Trust

Interventional Radiology – pre-operative assessment pathway

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This pathway gives guidance on patients attending Worcestershire Acute Hospitals for a procedure under Interventional Radiology.

Although the general principles of pre-operative assessment apply to this patient group there are some important differences with regards to Interventional Radiology patients.

This guideline is for use by the following staff groups:

Pre-operative Assessment nurses
Interventional Radiology nurses
Anaesthetic staff
Radiology staff

Lead Clinician(s)

Drs. S H Rashid & M Maddock	Consultant Vascular & Interventional Radiologists
Dr. James Hutchinson	Anaesthetist

Approved by *Pre-op Governance Meeting* on:	21st September 2020
Approved by *SCSD Divisional Governance* on:	28th October 2020
Approved by *Pre-op Directorate Governance* on:	4th January 2021
Updates approved by Radiology /Pre-op directorate governance on:	10th May 2023 (Radiology) / 18th April 2023 (POA) and disseminated to SCSD meeting (31.5.2023)
Updates approved at Radiology directorate governance on:	13th December 2023

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Review Date : This is the most current document and should be used until a revised version is in place	12th November 2025

Key amendments to this guideline

Date	Amendment	Approved by:
28th Oct 2020	New document approved	SCSD Divisional Governance
4th January 2021	Pre-operative assessment Key Documents approved for 3 years	Pre-op Directorate Governance Meeting
15th January 2021	Amendment to table pg5 – Advising stopping DOACS before IR cases	Dr Hutchinson/Dr Maddock
31.08.22	Amendment to all-inclusive pregnancy status enquiries	Julia Rhodes
31.08.22	Inclusion of Trans-rectal biopsy & instructions for edoxapan, enoxaparin, dipyridamole & prasugrel	Julia Rhodes /Dr Ed Mitchell
16.2.23	Adjustment to dipyridamole cessation time for low bleeding risk procedures Incorporation of information about pre-procedural pathway and referral from interventional radiology to pre-operative assessment. Reclassfication of ascites drainage into 'high risk' bleeding procedure	James Hutchinson / Mark Maddock
13.12.23	Wording changed regarding fasting instructions. CT biopsies removed under procedures needing starving instructions.	Dr R Chivate
27.12.23	Extended document for 6 months whilst under review	Dr Harsha Mistry
12th November 2024	Document extended for 12 months whilst awaiting National Guidelines to inform if changes are required	Dr Harsha Mistry

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Types of interventional radiology (IR) procedures covered by this guideline

- Peripheral angioplasty/stenting
- Embolisation (include uterine fibroids embolization (UFE)
- Percutaneous nephrostomy and/or antegrade stenting
- Percutaneous biliary drainage/stenting
- Angiography
- CT or US guided solid organ/other biopsy
- CT or US guided drainage (need bloods & telephone assessment only)
- IVC filter placement/removal
- Testicular vein embolization
- Organ ablation

Types of interventional radiology (IR) procedures NOT covered by this guideline

PICC lines, Nephrostomy exchanges and Perkustay catheter exchanges DO NOT need pre-operative assessment except for Covid-19 screening.

Details of Guideline

Abbreviation's used

Interventional Radiology	IR
Preoperative Assessment	POA
Preoperative Assessment Clinic	POAC

Interventional Radiology patient pathway

This describes how patients are booked for interventional radiology procedures and the communication between IR and POA departments.

1. Patient is reviewed by a specialist team and referred to IR via electronic referral (ICE referral at time of writing).

2. Referral is vetted by IR consultant to ensure patient is appropriate for procedure.

3. IR consultant sends patient details to IR co-ordinator who books:

    I. Consent clinic
    II. Procedure on IR list
    III. Pre-assessment by emailing: wah-tr.CountywidePreOpAssessmentBooking@nhs.net

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IR co-ordinator should give as much notice as possible to the POA team due to high demand on the POA service.

4. IR Consent clinic is completed over the telephone:
   I. Type A procedures (i.e. smaller procedures): IR nurse consent clinic
   II. Type B procedures (i.e. more complex vascular work / organ biopsy / lung ablation): IR consultant consent clinic

   At consent clinic information should be obtained specifically about anticoagulation for recent blood clot (i.e. PE or DVT) or for metallic heart valve. These patients are likely to require anticoagulation bridging and the pre-op team should be forewarned of this by emailing:
   wah-tr.CountywidePreopAssessmentBooking@nhs.net

   Prescription of bridging therapy is a shared responsibility between IR consultant and POA Anaesthetist. The main patients requiring bridging are those with metallic heart valves or recent blood clot (i.e. within 6 weeks). Guidance should be based on 'Peri-operative Oral Bridging (KD 017). Where there is uncertainty about bridging cardiology (i.e. for metal heart valves) or haematology (i.e. for recent blood clots) should be consulted.

   Any documentation or correspondence generated by the Consent Clinic should be uploaded to the patient notes (CLIP at the time of writing) by the IR co-ordinator

5. POAC for LA IR patients will be booked into an appropriate slot. This can be telephone or face to face. POA clinic assessment is a focused on:

   I. Medication documentation
   II. Medication advice for anti-coagulants and anti-diabetic medications (see below)
   III. Allergies
   IV. Language or communication barriers
   V. Dementia or cognitive impairment
   VI. Hypertension
   VII. Renal problems
   VIII. Previous MRSA infection
   IX. Functional status – how far can a patient walk? Are they able to climb a flight of stairs? Can they lie flat for procedure?
   X. Fasting instructions for certain patients (see below)
   XI. Information about need for pregnancy testing

For IR cases under GA (i.e. lung ablation) the full pre-assessment is warranted.

A POAC support clinic will be required for:

I. Height / weight and BMI
II. MRSA swab (vascular IR patients require an MRSA swab within 8 weeks, other IR patients require MRSA swab within 18 weeks)

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III. Basic obs (heart rate / BP / Sats)
IV. Blood investigations as below
V. For lung ablation patients and ECG may be indicated

6. In the unlikely event that the patient cannot attend a POA prior to their TCI the patient can attend a POA Support appointment only for bloods and obs. These requests should be made digitally by the IR team ahead of the POA Support appointment.

7. Where clinical issues are identified in POAC there are 2 escalation routes:
   I. Escalate to the POA anaesthetist via the worklist (although not all POA consultants will have a detailed understanding of the procedures being performed)
   II. Escalate to the IR consultant using the generic email inbox: wah-tr.ir.nurses@nhs.net . This email should be titled 'PRE-OP QUERY'.

8. Results from pre-operative investigations (i.e. blood results) will be checked by the pre-op team and abnormal results escalated to the IR consultant via the email address wah-tr.ir.nurses@nhs.net.

Investigations before IR procedures

- There are some exceptions to the NICE guidance on preoperative investigations.

  General IR requests

  - Please ensure there is an FBC and Coagulation screen (even if ***not*** on warfarin or DOAC) for all patients having a high bleeding risk IR procedure (procedure examples are in table below) within 4 weeks of the procedure. If platelets are <50/ INR or APTTr is ≥1.5 please discuss with radiologist performing case.

  - Please ensure there is U and E for all patients having an IR procedure within 4 weeks of procedure (IV contrast is frequently required).

  - Please ensure that individuals registered as female at birth aged 12-55yrs are informed they may have a pregnancy test on the day of the procedure because of the risks of radiation and IV contrast. Hysterectomy is the only exception to this. This is not required for Trans-rectal prostate biopsy.

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Patients having percutaneous biliary drainage/stenting

- Please ensure there is an FBC, U&E, coagulation profile (including PTr and APTTr) and LFT within 7 days of the procedure

Group and Save (G+S) requirements

- Currently solid organ biopsy (i.e. renal or liver biopsy) patients should have a 2nd Group and Save, where possible performed prior to admission in line with blood bank requirements. Occasionally, due to infection control restrictions (i.e. COVID-19) this will have to done on the admission ward.
- Peripheral vascular IR cases (i.e. angioplasty) need to have 1 G+S on the system and do not routinely require a 2nd G+S (i.e. they do not have to attend at 72 hours for a 2nd G+S if otherwise routine. If a patient has antibodies, then please make the IR consultant aware in case they would like Cross Matched blood. If clinical judgement dictates that a valid 2nd G+S is needed, then that judgement should override this guideline.

Medicine management before IR procedures

- Generally, medicine management is in line with Trust guidance (NBM and Perioperative Medicine Use guidance WAHT KD 017)
- There are some exceptions noted below:
- ***Diabetic patients***
  - Diabetic patients who are not required to fast for their procedure can continue usual antidiabetic medications with a light diet.
  - Please follow Trust guidance (Perioperative Management of Diabetes for Adult Patients undergoing surgery WAHT KD 017)
  - If a patient has renal dysfunction (i.e. eGFR below 45) and takes metformin please discuss peri-procedural metformin administration with the interventional radiologist doing the case. In patients with impaired renal function the metformin needs to be paused for 48 hours prior to the procedure to reduce the risks of contrast induced nephropathy.
- ***Antiplatelets and Anticoagulants***
  - The management of anticoagulants depends on the procedures bleeding risk balanced against the risk of thrombosis with medication discontinuation
  - The table below gives guidance on which drugs can be continued prior to an interventional radiology case.
  - Procedures can be divided into high risk and low risk of bleeding groups:

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High Bleeding Risk Cases	Percutaneous nephrostomy / biliary intervention / solid organ biopsy / arterial interventions (i.e. stenting/angioplasty) and embolization (i.e. uterine fibroid embolization), tunnelled venous catheter/IVC filter placement or removal/lung biopsy or ablation/ trans-rectal prostate biopsy / abdominal (i.e. ascitic) drains
Low bleeding risk cases	Non-tunnelled venous catheter / joint aspiration / joint injection / superficial biopsy / drainage (i.e. seroma drainage)

Anti-platelets

- For peripheral angiography/angioplasty/stenting the patient should stay on aspirin if prescribed. If also on clopidogrel then this can also be continued (unless the iliac vessels are being accessed, in which case it should be paused for 7 days).
    - **If there is uncertainty, please contact the interventional radiologist doing the case**

Anticoagulants (i.e. warfarin or DOACS)

- Warfarin should be stopped for 5 days prior to an IR procedure
- The DOACS should be stopped for 48 hours prior to an IR procedure (special consideration is given to Dabigatran, which may need to be stopped for longer in cases of renal impairment – see Appendix 1)
- Anticoagulation bridging may be required, particularly for patients stopping warfarin. Typically, these patients are those with metal heart valves, recent thromboembolism or prothrombotic disease (i.e. Protein C/S deficiency).
    - Please discuss anticoagulation bridging with the interventional radiologist doing the case
- Responsibility for prescribing bridging is shared between the IR conslutants and the POA anaesthetists. Where there is uncertainty specialty advice, i.e from haematology, should be sought.

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Anticoagulant	***Low bleeding risk***	***High bleeding risk***
Aspirin	Continue	Withhold for 5 days (*continue* for arterial stenting/angioplasty, lung biopsy, ablation)
Clopidogrel	Can continue	Withhold for 7 days (*continue* for vascular IR – i.e. arterial stenting/angioplasty unless iliac vessels intervention required)
Warfarin	For elective cases withhold for 5 days (aiming for an INR below 2). Please discuss bridging with IR specialist.	For elective cases withhold for 5 days Discuss bridging with IR specialist Check INR on the evening before or morning of the procedure
DOAC Apixaban / Rivaroxaban	Withhold for 2 days	Withhold for 2 days
DOAC Dabigatran Edoxaban	Withhold as per 'High Bleeding Risk'	prior to appointment eGFR >80 withhold for 2 days eGFR 50-80 withhold for 3 days eGFR 30 – 50 withhold for 4 days
CLEXANE (Enoxaparin)	**Prophylactic dose** – Stop 12 hours prior to procedure **Treatment dose –** Stop 24 hours prior to procedure If eGFR <15 refer to haematology	No further checks are required
DIPYRIDAMOLE (persantin)	Can continue	Withhold for 2 days
PRASUGREL	Withhold for 5 days	Withhold for 7 days
NSAIDS	Continue	Withhold for 2 days

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Anti-hypertensives

- Patients should be advised to continue all anti-hypertensives as there is not the risk of hypotension associated with general anaesthesia.

Fasting instructions prior to IR cases

IR patients who should be asked to fast prior to the procedure:

- Percutaneous nephrostomy / antegrade ureteric stenting
- Biliary drainage / PTC
- RIGs
- Patients having a procedure under general anaesthetic

IR patients who *do not* require fasting prior to the procedure:

- Elective angioplasty cases
- Smaller procedures i.e. IVC placement/removal or testicular vein embolisation

Suggested fasting instructions are given below:

Patients should not eat anything or chew gum 6 hours prior to procedure time and should not drink anything 2 hours prior to procedure time.

In urgent/emergency inpatient cases there is a risk of conversion to GA or heavy sedation and these patients will be advised to fast prior to the procedure.

Pre-procedural IV hydration

Some patients will require pre-procedural treatment to reduce the risks of contrast induced kidney failure. These patients include:

- Patients with CKD and an eGFR of <45

Pre-procedural treatment is currently IV hydration with 0.9% saline. This will be arranged by the radiologist. Please discuss with the Radiologist if you feel a patient will require pre-procedural IV hydration. Usually it is given for 2 hours before the case and 4 hours after the case.

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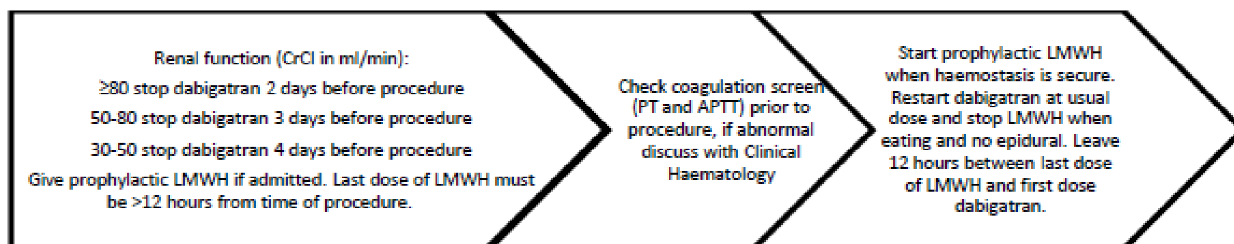
Appendix 1.

Management of patients who are on Dabigatran who require cessation of anticoagulation for a procedure (*from Trust Guideline: Warfarin and Other Oral Anticoagulants Guidelines and Procedures*)



References

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