TRA-MINW

REFERENCE: Protocol Choice by Indication

Multiphase + Malignancy-Specific

This is a summary document to reference for clarification regarding appropriate protocols, laid out by indication for exam and cancer type.

The information contained is the same as that on each specific protocol.

ROUTINE ABDOMEN/PELVIS:

- PV at 70 sec
- *No need for delay with trauma*

DELAY TIMING:

- **Late Arterial Phase:** BOLUS TRACKING on descending aorta just above hiatus, start scan 15 seconds after ROI exceeds 150 HU
  - ONLY if scanner is NOT able to perform bolus tracking, use 40 sec
- **Routine Portal Venous Phase**: 70 sec
- **Adrenal Venous Phase**: 75 sec
- **Late Venous Phase:** 90 sec, use in:
  - CT Enterography for anemia
  - CTA Abd/Pel for Mesenteric ischemia, GIB, endograft
- **Delayed Venous Phase:** 120 sec, use in:
  - Nephrographic Renal
- **5-Minute Delay Phase**: 300 sec, use in:
  - Liver 3-phase and 4-phase
  - Unless concern for cholangiocarcinoma, then 10-minute delay
- **15-Minute Delay Phase**: 900 sec, use in:
  - Multiphase adrenal

SPECIFIC INDICATIONS: LIVER + PANCREAS

LIVER

Note #1: MR is preferred if possible

Note #2: No 2-phase liver protocol

3 phase (Arterial, PV, 5-minute delay)

- **New** indeterminate liver lesion (<u>without</u> history of liver dysfunction or cirrhosis), including (but not limited to):
  - Adenoma
  - FNH
  - Hypervascular metastatic disease (includes: thyroid, melanoma, choriocarcinoma)
  - Cholangiocarcinoma (with 10-minute delay)
- **Follow-up** for previously characterized liver lesions, including (but not limited to):
  - HCC (*without history of prior TACE or ablation – new HCC or hx TACE/Ablation, use 4-hase, as below*)
  - Adenoma
  - FNH
  - Known hypervascular metastatic disease (without prior ablation; includes: thyroid, melanoma, choriocarcinoma)
  - Cholangiocarcinoma (with 10-minute delay)
- Cirrhosis **follow-up** (with prior 4-phase available on PACS)

4 phase (NC, Arterial, PV, 5 minute delay)

- New indeterminate liver lesion with history of hepatocellular dysfunction or cirrhosis
- New possible HCC
- Baseline cirrhosis
- Follow-up HCC status post TACE or ablation
- Follow-up metastatic disease post ablation

SPECIAL NOTES for clarification:

- **Hypervascular metastases, as above:**
  - New and follow-up (without prior ablation): 3-phase liver
  - Follow-up with prior ablation: 4-phase liver

- **Cholangiocarcioma, as above:**
  - New and follow-up: 3-phase liver with 10-minute delay

PANCREAS

- **First time/elevated lipase/rule out pancreatitis**
  - Routine CT Abd/Pel (PV 70 sec, single phase)

- **Chronic Pancreatitis**

- Routine CT Abd (PV 70 sec, single phase)

- **Pancreatic mass evaluation (solid or cystic) or pancreas protocol ordered by GI or other subspecialist**
  - 3-phase pancreas (NC, A, V)
  - Note: MR is preferred if possible

- **Follow-up acute pancreatitis to assess for pancreatic hemorrhage or necrosis:**
  - 3-phase pancreas (NC, A, V)

PROTOCOL BY CANCER TYPE

LIVER

HCC:

- New: 4-phase liver
- Follow-up **without** TACE or ablation: 3-phase
- Follow-up **with** TACE or ablation: 4-phase

Cholangiocarcinoma:

- Initial & follow-up: 3-phase liver

Carcinoid:

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

Other Neuroendocrine:

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

Choriocarcinoma:

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

Thyroid:

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

Melanoma:

- Initial & follow-up (if no prior ablation): 3-phase liver (A, V, D)
- Follow-up + prior ablation: 4-phase liver (NC, A, V, D)

PANCREAS (solid or cystic mass)

- 3-phase pancreas

RENAL

Note: MR is preferred if possible

NEW indeterminate renal mass

- 3-phase renal (NC, A, V 120 s)

Known, routine follow-up (with or without medical treatment)

- Routine CT Abd Pel (PV 70s, single phase)

S/p *total* nephrectomy

- Routine CT Abd Pel (PV 70s, single phase)

S/p *partial* nephrectomy

- 3-phase renal (NC, A, V 120s)

S/p surgery with KNOWN *residual* tumor

- 3-phase renal (NC, A, V 120s)

S/p cryobalation or radiofrequency ablation

- 3-phase renal (NC, A, V 120s)

TRA-MINW

BLADDER

- Routine CT Abd/Pel (PV 70s, single phase), unless otherwise specified by ordering provider
- IVP only if specified by ordering urologist to look for upper tract disease

ESOPHAGEAL

- Routine CT Abd/Pel (PV 70s, single phase) + **250 mL water** just before scanning

STOMACH

- Routine CT Abd/Pel (PV 70s, single phase), *no need for multiphase*
- Supine position

UROTHELIAL

- CT Urogram/IVP

OTHER: BOWEL

Inflammatory Bowel Disease (CT Enterography, single phase)

- **Arterial (Enteric) Phase:** BOLUS TRACKING on descending aorta just above diaphragmatic hiatus, start scan 20 seconds after ROI exceeds 150 HU.
  - ONLY IF scanner is NOT able to perform bolus tracking, use 45 second delay

Anemia of unknown etiology (CT Enterography, 2 post-contrast phases)

- **Arterial (Enteric) Phase:** BOLUS TRACKING on descending aorta just above diaphragmatic hiatus, start scan 20 seconds after ROI exceeds 150 HU.
  - ONLY IF scanner is NOT able to perform bolus tracking, use 45 second delay
- **Late Venous Phase:** 90 second delay

Mesenteric Ischemia, Acute GI Bleed, Post- Endograft or Vascular Surgery (CTA: NC, arterial, late venous)

- **Non-contrast**
- **Arterial Phase**: BOLUS TRACKING on descending aorta just above hiatus, start scan when ROI exceeds 100 HU.
  - ONLY IF scanner is NOT able to perform bolus tracking, use 30 second delay
- **Late Venous Phase**: 90 second delay