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Epilepsy Clinic
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Wada Testing – Initial Administrative Protocol

1. Patient consents to test with primary epilepsy MD as summarized in clinic consultation note.
2. Doctor obtaining consent initiates Wada protocol below (Dr. Hrazdil and MOAs will proceed with completion and faxing of steps below).
   - ☐ Angio requisition completed and faxed to radiology to coordinate a date (usually Friday am).
   - ☐ Lab requisition for Creatinine, INR/PTT is given to patient (or faxed) & copied to Angio.
   - ☐ SAR for Methohexital* (see below) is completed (in PLEXIA investigations section) and faxed to Judy Yip with courtesy E-mail (judy.yip@vch.ca) ensuring that drug will be available for date.
   - ☐ Memo Neuropsychology on Plexia to ensure availability with timing of Epilepsy MD and Angio suite.
   - ☐ If patient not already known to Wada Epilepsy MD, coordinate pre-Wada neuropsychology appointment with time to meet the epilepsy MD.
   - ☐ Call EEG lab head technologist to ensure no scheduling conflicts. Fax EEG requisition to lab with proposed date & time reading "Wada test" on standard EEG requisition.
   - ☐ MOAs generate information sheet/appointment summary (separate template) & mail to patient home address with memo alerting epilepsy RN to process completion.
   - ☐ Epilepsy RN to phone patient and next of kin to review details prior to pre-testing and Wada.

*Notes about obtaining methohexital

- ☐ Please ensure that the references on the Health Canada SAP request form are from the last 10 years.
- ☐ The completed HC SAP request should be faxed directly to Health Canada at the number on the form.
- ☐ Email the form to Judy Yip along with the approximate date required and the patient's MRN so that she can follow up.
- ☐ Methohexital is a controlled substance and it takes 2 months or more after the Health Canada approval for the drug to arrive. If the supply is needed urgently, Judy can try to borrow supply but would prefer to not to have to do this every time.
- ☐ To obtain supply from the pharmacy, a prescription is required. Radiology will need to present their pink narcotic book when picking up the medication from pharmacy. It needs to be stored securely and destroyed appropriately as it is a controlled substance.

Wada Pre-Testing Day

1. Patient arrives for 30 minute neuropsychology appointment, usually the morning of the day before Wada testing.
2. Instructions from the letter are reviewed once again.
3. Rehearsal of the actual procedure done once with the neuropsychologist: with arm raising and counting aloud, one arm going weak, the entire test with testing of language followed by 12 card presentation (separate pre-test cards in neuropsychologist's office).
4. Patient advised that it is OK to feel whoozy /funny/shaky/drowsy/unable to speak. Important to stay as alert as possible and focus their attention on the tester, following related instructions.
5. Another doctor will be there to test arm strength periodically (q 3 words).
6. If patient not known to doctor doing Wada EEG testing, consider brief encounter new MD.

Wada Testing Protocol

1. Patient to bring someone with them to 1st floor lobby JPP at 6:30am.
2. Patient to check in at angiography suite for admission and IV start at 6:45 am.
3. Send patient to EEG lab for electrode application by 7:30am.
4. EEG technologist to bring EEG machine back to angiography suite with patient around 8:00am.
5. Neuroradiologist obtains informed consent for procedure.
6. Same set-up as cerebral angiogram.
7. Epilepsy MD, Angio RN & neuroradiologist confirmation re: Methohexital preparation: 1mg/1cc solution drawn up in a 10cc syringe for each side (see separate page).
8. Diagnostic angiogram performed on primary side of interest (Wada test contraindicated in presence of anomalous connection to basilar artery, eg, persistent trigeminal artery).
9. ICA IA METHOHEXITAL INEJCTION – 1st Side (primary side of interest/intended surgery)
    a. **5mg** IA initial push; followed by another **2mg** after 2 minutes post-injection (independent of patient strength and language function).
    *Hold 2nd injection only if card presentation has already been completed and/or the patient is extremely obtunded and inattentive to testing.
    **Another 2-3mg of methohexital may rarely be needed if patient regains strength prior to study offset (papers indicate that it is safe to use at least 10mg/side/setting).
10. Language and strength are tested. Once arm drops, neuropsychologist performs response testing followed by stimulus presentation. Strength is tested q 3 cards, until completion of 12 cards.
11. Wait until patient is clinically and electrographically at baseline (~10 mins from initial injection).
12. Neuropsychologist tests recall and recognition while EEG is monitored. EEG technologist records answers.
13. ICA IA METHOHEXITAL PROTOCOL – 2nd Side (usually around 30 minutes post 1st injection)
    a. **5mg** IA initial push; followed by another **2mg** after 2 minutes post-injection (independent of patient strength and language function).
    *Hold 2nd injection only if card presentation has already been completed and/or the patient is extremely obtunded and inattentive to testing.
    **Another 2-3mg of methohexital may rarely be needed if patient regains strength prior to study offset (papers indicate that it is safe to use at least 10mg/side/setting).
14. Wait until patient is clinically and electrographically at baseline (~10 mins from initial injection).
15. Neuropsychologist tests recall and recognition while EEG is monitored. EEG technologist records answers.
16. Neuroradiologist pulls catheter with right femoral pressure. Patient is taken to recovery area.
17. Neuroradiologist writes standard post-angiogram orders, with patient transfer to PCC.
18. Neurologist meets with patient in post-operative recovery area later in the day to review study results and management plan moving forward.
19. Patient discharged home with next of kin after appropriate observation period.

NOTE: It is essential that the entire testing team be present in the room or control room when the angiogram commences. Typically it will only take 5-10 minutes to get to the target artery with young patients, and it increases stroke risk to have the patient wait for the team with the catheter in place.

Wada Testing Protocol for Radiology Angiography Suite

Methohexital (Brevital)

- Reconstitute 500mg with 50mL sterile water = 10mg/mL
- Take 1 cc of 10mg/mL and add to 9mL sterile water (in a 10ml syringe) = 1mg/mL Brevital
- **NB 0.9% sodium chloride may also be used but there is a higher risk of precipitation of Brevital with NaCl and resultant injection of particulates/emboli)**

ROUND ONE (side of intended surgery) – Following diagnostic angiogram

- Initial ICA IA injection: 5 mg Brevital
- Rate of injection = 1mL/second
- 2nd ICA IA injection (2 minutes after initial injection): 2mg Brevital
- ** Rare 3rd injection: additional 2-3mg to be given only if patient regains strength/language before completion of testing despite protocol above
  (It is safe to administer at least 10mg intra-arterial/side in one sitting)

EEG is watched for normalization.

Around 10 minutes from initial injection, memory is tested.

Diagnostic Angiogram can then be repeated on the opposite side.

ROUND TWO (side opposite of intended surgery) – Optimally >30 mins from initial injection

- Repeat exactly as above on the other side

PATIENT FLOW:

1. Check in as per usual angio.
2. Patient to EEG lab for electrode application.
3. Room set up and procedure as per usual cerebral angiogram with Wada modification as above.
4. Post-procedure hemostasis with patient transfer to PCC until discharge ~5 hours later.