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VASCULAR TECHNOLOGY PROFESSIONAL PERFORMANCE GUIDELINES

Quality Assurance Guidelines for Accuracy of Examinations in the Vascular Laboratory

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Quality Assurance Guidelines for Accuracy of Examinations in the Vascular Laboratory

The Following Quality Assurance Guidelines are a compilation of recommendations or requirements from the Society for Vascular Ultrasound and the IAC (Intersocietal Accreditation Commission) — 2012

PURPOSE

To assure that ultrasound exams are accurate compared with alternate imaging modalities, ultimately they must have the etiology of the error identified, and have corrective measures initiated. Make sure they are reviewed in weekly, monthly or quarterly meetings of the medical director and laboratory supervisor, or his/her designee; annual meetings with all staff must be held to review quality.

COMMON INDICATIONS

- To provide accurate diagnostic information to referring physicians
- To ensure patients receive accurate high quality care
- To maintain accreditation of the laboratory by a recognized body

LIMITATIONS

Limitations to proving accuracy of ultrasound exams can include:

- not providing written protocol for all examinations provided
- not providing review of staff knowledge and ability in performing exams
- lack of providing continuing education, internally and externally offered programs
- sonographers not “chasing” the problem, just following basic requirements outlined in the lab protocol
- limited knowledge of methods and criteria by interpreting physician
- limited correlation methods in infrequently performed cases
- low volume exams may decrease expertise and accuracy

CORRELATION OF DIAGNOSTIC ULTRASOUND FINDINGS

A. Correlation should include the following:

- Level and severity of disease must be identified/reported by US criteria
- Methods of correlation must be able to report level and severity of disease
- Protocol in each laboratory must be followed and correlations should determine that if protocol is not followed, is that a reason for non-correlation
- All correlations should be ongoing, throughout each calendar year, with written minutes of each meeting documented, and all staff participating regularly
- All comparisons should be made <30-90 days of each other, based on urgency of the exam performed
- All studies must be interpreted according to written criteria
- A written or computer generated log should be kept and include patient name, indication, exam type, date, sonographer and physician names, and a findings summary.

B. Laboratories should perform a minimum number of exams of each type in order to maintain accuracy among all staff:

- 100 complete studies yearly; a minimum of 30 correlations must be submitted for review for IAC accreditation
- Laboratories not accredited by the IAC should ideally perform a minimum of 75–100 studies of each type
- In some cases, the exam numbers may be low, in which case correlation with another imaging/surgical/interventional modality should be carried out with each correlation possible.

C. Types of Examination:

1. Cerebrovascular, extracranial

Methods:

- digital subtraction angiography
- contrast angiography
- contrast enhanced CTA
- MRA (magnetic resonance angiography)
- operative findings as reported by operating surgeon
- minimum of $\geq 70\%$ accuracy must be achieved

2. Intracranial Carotid (TCD, blind or imaging)

Methods:

- digital subtraction angiography
- contrast angiography
- contrast enhanced CTA
- MRA (magnetic resonance angiography)
- operative or interventional findings
- minimum of 30/year using above
- when less numbers are performed annually, at least 10 abnormal findings per year must have correlation with another imaging technique

3. Peripheral Arterial Exams

Methods:

- digital subtraction angiography
- contrast angiography
- contrast enhanced CTA
- MRA (magnetic resonance angiography)
- operative or interventional findings
- minimum of $\geq 80\%$ accuracy must be achieved

4. Visceral (mesenteric, aortoiliac, renal)

Methods:

- digital subtraction angiography
- contrast angiography
- contrast enhanced CTA
- MRA (magnetic resonance angiography)
- operative or interventional findings
- minimum of $>70\%$ accuracy must be achieved

5. Venous (upper and lower extremity)

Methods:

- repeat exam by alternate sonographer at the same sitting (this is only approved for comparisons in venous duplex examinations)
- clinical outcome (confirmation from attending is required, and may be achieved using a form letter requesting outcome/treatment or further investigative tools which attending physician may have ordered)
- over-reading by an alternate qualified physician of the final impression, with review of images
- venography (especially of the upper extremities)
- operative or interventional findings

6. Screening Exams

Methods:

- correlate with compete ultrasound exam, by alternate sonographer
- angiographic, interventional or surgical findings
- minimum of 50 studies, each type, yearly
- minimum of 15 correlations yearly
- CIMT – a repeat exam or over-read and recalculation of IMT measurements

EQUIPMENT QUALITY ASSURANCE

A. Requirements:

- Twice yearly preventative maintenance of equipment must be performed
- Accuracy of transducers must be documented with use of a phantom measurement and records retained by department
- Equipment must be cleaned on a regular basis within individual laboratory policy
- Maintenance policies and agreements for diagnostic equipment must be maintained by each laboratory

CONTINUING PROFESSIONAL EDUCATION

A. Requirements:

- credentialing in the modality(s) being practiced
- available credentials via ARDMS, ARRT, CCI
- minimum of 30 credit hours every three years
- each individual responsible for maintaining records of credits

B. Methods:

- attendance at regional or national meetings
- attendance at local grand rounds or
- online CME programs
- credits obtained through scientific journals