UNMC Nebraska Medicine

ADDENDUM L

Electrophysiology Response to COVID-19

Last Revised: March 18, 2020 (Tsai)

Situation: COVID-19 is a respiratory illness with mild-to-severe symptoms. While it can affect anyone, certain populations are at increased risk due to age and/or co-morbid health conditions.

Background: Social distancing is a strategy to limit the spread of COVID-19. This is a conscious effort to reduce potential contact between people to slow viral communication. The EP section will consider ways to enhance social distancing to aid the reduction in community spread of coronavirus, including staff and patients.

Assessment: Case fatality rates for co-morbid patients are higher than average for the following populations: cancer, hypertension, chronic respiratory disease, diabetes, cardiovascular disease. Cases requiring long procedure time, prolonged anesthesia, or potential for peri-operative complications requiring ICU admission should be considered for deferral. In addition, low cardiovascular risk patients should be offered postponed evaluation. However, symptomatic patients still need to receive best care available when considered against potential risks.

EP patient encounters will triaged in the following levels (1-to-3, urgent-to-non urgent) of importance.

I. Clinic (new or return):

A. Level One

1. Sustained ventricular tachycardia
2. ICD, multiple shocks
3. Complete AV block
4. Device post-implant/upgrade (<3m)
5. Device/pocket, infected (or suspected) with positive culture and/or evidence endocarditis
6. Device at Elective Replacement Interval
7. New syncope (physician to triage)

B. Level Two

1. 2nd degree AV block, Mobitz II or 2:1
2. Symptomatic bradycardia (HR <50 bpm)
3. Supraventricular tachycardia (refractory to drug)
4. Symptomatic atrial fibrillation (refractory to drug)

5. Symptomatic non-sustained ventricular tachycardia (refractory to drug)
6. Anti-arrhythmic drug (particularly sotalol or dofetilide) without recent (>6 months) follow-up and/or history of renal insufficiency (consider Kartia or Apple watch download for high risk patients)
7. Symptomatic heart failure
8. ICD, isolated shock
9. ICD, ATP therapies
10. Lead failure (ICD and secondary prevention; pacing and dependent)
11. Device, upgrade for resynchronization therapy
12. CIED/MRI for stroke/mass evaluation

C. Level Three
1. Syncope, known non-cardiac
2. Palpitations (no documented sustained SVT; holter appointment)
3. Premature atrial contractions (holter appointment)
4. Premature ventricular contractions (holter appointment at Oakview?, update echocardiogram)
5. Non-sustained atrial and/or ventricular tachycardia (NSAT/NSVT)
6. Isolated supraventricular tachycardia
7. New onset/isolated atrial fibrillation or flutter
8. Asymptomatic chronic atrial arrhythmia (SVT, atrial fibrillation) or ventricular tachycardia with no recent (>1 year) therapies, on-or-off anti-arrhythmic drug
9. Simple device (pacemaker, defibrillator, loop record) follow-up
10. CIED/MRI for heart failure
11. Establish CIED (pacemaker/defibrillator/loop recorder)
12. Lead failure (ICD and primary prevention; pacing and not dependent)
13. Simple AAD (disopyramide, mexiletine, flecainide, propafenone, sotalol, dofetilide, amiodarone) follow-up without history of renal insufficiency
14. Hypertension (isolated)
15. Hyperlipidemia (isolated)
16. Heart failure, stable symptoms
17. Postural orthostatic tachycardia syndrome and/or orthostatic intolerance
18. Left atrial appendage exclusion (i.e. Watchman), temporary tolerance to anticoagulation

Recommendations:

1) Level One patients will be evaluated in clinic under all circumstances.

2) Level Two patients will be evaluated in clinic, at clinician's discretion based on urgency. If elective visits cancelled by UNMC/Nebraska Medicine directive, these patients will be rescheduled (Epic recall) in 3 months. Alternative testing should be considered (e.g.

short and long term holter, cardiac event monitor, mobile telemetry, remote monitoring).

- Will investigate options of scheduling appointments, particularly at remote location (i.e. Oakview Medical Building) for monitor placement to reduce exposure risk.
- Co-morbid risk factors should be considered when scheduling appointments (e.g. age, heart failure, etc.).

3) Level Three patients should be (re-)scheduled in 6 months.

- All routine device follow-up visits through June 30 should be re-scheduled as a quarterly remote monitoring. If clinic restrictions persist beyond July 1, consider extending remote monitoring an additional quarter
- Defer ECG monitoring for patients on anti-arrhythmic drug, except sotalol/dofetilide, unless history of renal insufficiency or other serious co-morbidity.

4) Dr Windle to explore and report on Telehealth options. Clinic follow-up recommendations subject to re-evaluation and physician discretionary action as options become available

II. EP Laboratory

A. Level One
1. Ablation, ventricular tachycardia with ICD shocks
2. Pacemaker implant (temporary or permanent), complete heart block, Mobitz II 2nd degree AVB (including 2:1), high grade AV block, or pauses >5 seconds
3. Device, generator exchange (Elective Replacement and dependent or secondary prevention or symptomatic RRT mode)
4. Defibrillator implant, secondary prevention
5. Extraction, device infection with positive high risk blood culture, pocket infected, and/or endocarditis
6. Extraction, pacing lead failure and dependent
7. Extraction, ICD lead failure and secondary prevention
8. Extraction, suspected pocket infection but negative cultures and no evidence of endocarditis (consider extended antimicrobial course)
9. Cardioversion, symptomatic atrial fibrillation

B. Level Two
1. Ablation, supraventricular tachycardia, atrial flutter, atrial fibrillation, PVC (related to VT)
2. Ablation, PVC (related to ventricular tachycardia) or VT with ATP therapies (no shock)

3. Defibrillator, primary/secondary prevention (consider alternative LifeVest)
4. Pacemaker, 2nd degree AV block (no significant pauses >3 sec; consider MCOT)
5. Device, generator exchange (minimal pacing or primary prevention)
6. Device upgrade for primary or secondary prevention (consider LifeVest)
7. Device upgrade for resynchronization, with or without extraction
8. Cardioversion, minimally symptomatic atrial fibrillation
9. Inpatient (determine necessity before discharge, and evaluate co-morbidities)

C. Level Three
1. Tilt table test (all indications)
2. Loop recorder (all indications, unless concern for cardiac syncope or at the time of ablation; otherwise consider cardiac event monitor or mobile telemetry)
3. Ablation, minimally symptomatic atrial arrhythmias (SVT, atrial flutter, atrial fibrillation)
4. Ablation, PVC (not related to ventricular tachycardia)
5. Extraction, pacing lead failure and minimally pacing
6. Extraction, ICD lead failure and primary prevention (consider LifeVest)

Recommendations:

1) Level One patients will be scheduled for procedure (Class A and B) under all circumstances. If Level One conditions (non-urgent cases) in effect, only one physician and team will be assigned to cover EP lab. EP physician will rotate as evenly as possible, accounting for availability to perform highly specialized complex procedures (i.e. extraction, ablation of ventricular tachycardia).

2) Level Two patients currently scheduled for procedure will be triaged (Class C>D) by assigned operator. If elective procedures cancelled by UNMC/Nebraska Medicine directive (Level One conditions only), these procedures will be cancelled and alternative therapies should be considered, unless patient becomes highly symptomatic (Class B).

- If semi-elective (Class C and/or D) procedures are permitted, two physicians and two teams will be assigned to cover EP lab.
- EP Lab Director (Dr Tsai) will review all cases and be responsible for determining a "will-call" list, based on patient severity. When semi-elective (Level Two) cases are permitted by hospital policy, patients will be contacted to schedule procedure in ordinal fashion. Therefore, patient case may not be assigned to clinic triage physician, pending appropriate specialized skill set (e.g. ablation atrial fibrillation/ventricular tachycardia, extraction).
- Same-day discharge will be highly encouraged including routine (ablation for SVT or atrial flutter; pulse generator exchange), as well as novel (pacemaker or defibrillator implant, ablation of PVC or atrial fibrillation ablation) procedures who meet suitable

criteria (consider co-morbid conditions, duration of procedure, and need for general anesthesia). Appropriate next day follow-up should be arranged, with consideration of possible exposure risk vs overnight observation.

3) Level Three (Stage E) patients will be deferred unless all Level Two (Stage C and D) cases have been completed, or all elective procedures have resumed.

4) If physician becomes (self) quarantined, alternative responsibilities will be considered including Telehealth (option pending), non-invasive monitoring, and remote monitoring.