UNM Guide for Pulmonary Embolism Management

Categories of PE:

1) Non-life threatening: treat per CHEST guidelines

2) Life-threatening
    a. Submassive:
        i. Definition: PE with evidence of Right Ventricular (RV) Strain *without systemic hypotension*
        ii. RV strain is quantified in 3 ways: 1) RV/LV ratio on axial CT 2) Positive Troponin level 3) BNP level >500ng/dl
        iii. Initial management is therapeutic anticoagulation and supplemental 02
        iv. Certain submassive PE patients are candidates for advanced therapies such as percutaneous thrombectomy or catheter-directed thrombolysis based on clot burden and degree of RV dysfunction
    b. Massive PE
        i. Definition: PE with evidence of Right Ventricular strain ***with systemic hypotension (systolic BP < 90mmHg for greater than 15 minutes or vasopressor requirement or systolic pressure drop >40mmHg in hypertensive patients)***
        ii. HIGH mortality (25-50%)

Massive PE patient initial management:

1) Immediate therapeutic anticoagulation
2) Supplemental 02 for Sat > 90. **AVOID INTUBATION AND MECHANICAL VENTILATION UNLESS ABSOLUTELY NECESSARY GIVEN HIGH RISK OF HEMODYNAMIC DETIORATION / CODE EVENT. TOLERATE SATURATION > 88% IF NECESSARY TO AVOID THIS**
3) Start vasopressor drip titrate to systolic > 100 mmHg
4) Place radial arterial line for hemodynamic monitoring
5) Have Systemic TPA (50 mg) on standby to administer if peri-arrest or blood pressure < 80mmgHg despite high dose vasopressor- may repeat once if still in full arrest at 15 minutes
6) Call UNM PALS (505-272-2000) and request to speak to H.E.L.P team consult attending to rapidly assess for candidacy for ECMO team retrieval vs systemic TPA vs urgent ED-to-ED transfer

UNM Guide for Pulmonary Embolism Patient Transfer

Contact: 505-272-2000 (UNM PALS). Request "H.E.L.P. Team Consult for Pulmonary Embolism". This will connect you to an in-house cardiothoracic ICU intensivist who can assist in the management of the patient and/or transfer process.

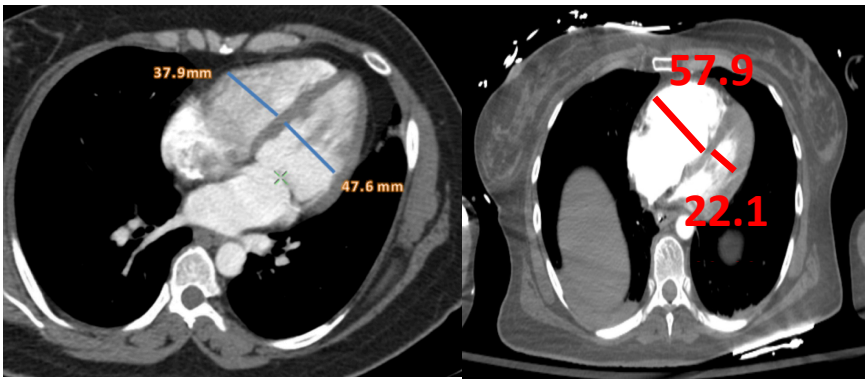
Information to have assembled prior to H.E.L.P team consultation:

1) **UPLOAD CHEST CT TO LIFEIMAGE**
2) Age and medical comorbidities (including specifically any history of DVT/PT, malignancy, or cardiac abnormalities)
3) Current vitals including oxygen requirement
4) BNP and Troponin levels (if patient is stable – if patient is unstable can forgo this lab to expediate care)
5) CT scan RV/LV ratio (either radiologist impression or provider calculation)
6) Confirm patient is amenable for transfer to UNM to receive PE Thrombectomy
7) Screen patient for any procedural sedation concerns (baseline agitation, difficulty laying still or flat, baseline alcohol/drug abuse issues)
8) Code status

RV to LV ratio calculations on axial CT imaging:

<0.9 is normal
0.9-1.1 – mild RV strain
1.1-1.3 – moderate RV strain
>1.3 – Severe RV strain

RV/LV calculation examples:



1) 37.9/47.6 = .79 (normal) 2) 57.9 mm/22.1 mm = 2.6 (severe RV failure)

Questions?

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