Differential Diagnosis of Acute Shortness of Breath



grouping (Initial test, diagnostic test) (remember ABCDE Initial test, diagnostic test) · Treatment dose LMW Respiratory embolism • Pleuritic chest pain • CVS: tachycardia, JVP distension, NK heave, loud P2, right S4 • <u>D-Dimer</u> (if low Wells score): raised • Treatment dose LMW • Nak factors (long haul flight, recent surgery, immobility) • CVS: tachycardia, JVP distension, RV heave, loud P2, right S4 • <u>CDDimer</u> (if low Wells score): raised • Treatment dose LMW • Pleumonia • Nak factors (long haul flight, recent surgery, immobility) • CALVES: look for DVT • CALVES: look for	(Initial test, diagnostic test) (remember ABCDE first)			
Respiratory embolism Pulumonary embolism •Pleuritic chest pain •Haemoptysis & SOB •Risk factors (long haul flight, recent surgery, immobility) •CVS: tachycardia, JVP distension, RV heave, loud P2, right S4 •D-Dimer (if low Wells score): raised •Treatment dose LMW •Pieuritic chest pain •Haemoptysis & SOB •Risk factors (long haul flight, recent surgery, immobility) •CVS: tachycardia, JVP distension, RV heave, loud P2, right S4 •D-Dimer (if low Wells score): raised •Treatment dose LMW •Pieuritic chest pain •CVS: tachycora chest •CALVES: look for DVT •SBP<90/pulselessness/persistent bradycardia = "massive PE" •CT_pulmonary anterogram •ECG: tachycardia, RV strain (T wave inversion in right chest and inferior leads), RBBR, right axis deviation, S1Q3T3 pattern rare •AGG: hypoxia, hypocapnia •CXR: may be wedge opacity, regional oligaemia, enlarged pulmonary artery, effusion •Antibiotics Pneumonia •Fever •Shortness of breath •Productive cough •Pleuritic chest pain •Confusion •Tachypnoea, cyanosis •Coarse crepitations and bronchial breathing •CMR: consolidation, air bronchogram •Infammatory markers: raised <u>Identify cause</u> •Antibiotics Pneumothorax •Sudden onset pleuritic chest pain •May be SOB if large •Risk factors e, Marfan's appearance, COPD/asthma <u>Ipsilateral</u> •Reduced chest expansion •Hyperresonance <u>Primary</u> •CXR: air in pleural space <u>Primary</u> •CXR: air in pleural space •CMR: conducture •CMR: conducture •CXR: air in pleural space <u>Primary</u> •CXR: air in pleural			ping	grouping
Pneumonia •Fever •Shortness of breath •Productive cough •Pleuritic chest pain •Confusion •Tachypnoea, cyanosis •Coarse crepitations and bronchial breathing •Dullness to percussion •Increased vocal resonance/tactile vocal fremitus •CXR: consolidation, air bronchogram •Inflammatory markers: raised Identify cause •Sputum culture •Sputum culture •Urinary pneumococcal and legionella antigens •Blood culture •Antibiotics Pneumothorax •Sudden onset pleuritic chest pain •May be SOB if large •Risk factors e.g. Marfan's appearance, COPD/asthma Ipsilateral •Reduced chest expansion •Absent breath sounds •Hyperresonance Tension pneumothorax •IVP distension phypotension •CXR: consolidation, air bronchogram •Inflammatory markers: raised Identify cause •Sputum culture •Urinary pneumococcal and legionella antigens •Blood culture •Antibiotics	hycardia, JVP distension, • D-Dimer (if low Wells score): • Treatment dose LMWH a, loud P2, right S4 • CT pulmonary angiogram • Thrombolysis if massive PE i look for DVT • CT pulmonary angiogram • CT pulmonary angiogram • Loud P2, right S4 • CT pulmonary angiogram • Thrombolysis if massive PE • Look for DVT • CT pulmonary angiogram • CT pulmonary angiogram • ECG: tachycardia, RV strain (T • Wave inversion in right chest • Thrombolysis if massive PE and inferior leads), RBBB, right axis deviation, S1Q3T3 pattern • ABG: hypoxia, hypocapnia • CXR: may be wedge opacity, • CR: may be medge opacity, • regional oligaemia, enlarged	euritic chest pain aemoptysis & SOB sk factors (long haul flight, ent surgery, immobility)	atory Pulmonary embolism	Respiratory
Pneumothorax •Sudden onset pleuritic chest pain •May be SOB if large •Risk factors e.g. Marfan's appearance, COPD/asthma Ipsilateral •Reduced chest expansion •Absent breath sounds •Hyperresonance Tension pneumothorax •IVP distension •CXR: air in pleural space Primary •CXR: air in pleural space •Line of the state stat	hoea, cyanosis • <u>CXR</u> : consolidation, air •Antibiotics crepitations and bronchial bronchogram •Inflammatory markers: raised g •Inflammatory markers: raised s to percussion Identify cause ed vocal resonance/tactile •Sputum culture mitus •Urinary pneumococcal and legionella antigens •Blood culture	ever nortness of breath roductive cough euritic chest pain onfusion	Pneumonia	
• Tracheal deviation (away from affected side) • Tracheal deviation (away from	Il •CXR: air in pleural space Primary d chest expansion •CXR: air in pleural space •<2cm → CXR monitoring breath sounds •Sonance •>2cm or Sx → aspirate gneumothorax •<1cm → observe for 24h ension, hypotension •1-2cm → aspirate side) •>2cm or Sx → chest drain	udden onset pleuritic chest pain lay be SOB if large sk factors e.g. Marfan's bearance, COPD/asthma	Pneumothorax	
Asthma exacerbation •Dyspnoea •Wheeze •Asthmatic •Cyanosis, tachypnoea •Use of accessory muscles •Polyphonic wheeze •Reduced air entry •Reduced PEFR Clinical diagnosis •CXR: exclude infection and pneumothorax •Salbutamol nebs •Ipratropium nebs •Steroids •Asthmatic •Outperformation •Reduced PEFR •Clinical diagnosis •CXR: exclude infection and pneumothorax •Salbutamol nebs •Ipratropium nebs •Steroids •Magnesium IV •Reduced PEFR •ABG: usually normal PaO2 and low PaO2 (hyperventilation), if ↓PaO2 or 个PaCO2, patient is tiring •Magnesium IV •Antibiotics if evidence infection	s, tachypnoea accessory muscles bnic wheeze d air entry d PEFR $\begin{array}{c} Clinical diagnosis\\ \bullet CXR: exclude infection andpneumothorax\\ \bullet ABG: usually normal P_aO_2 andlow P_aCO_2 (hyperventilation), if\lor P_aO_2 or \uparrow P_aCO_2, patient istiring\bullet Blood and sputum cultures ifevidence of infection\begin{array}{c} \bullet Salbutamol nebs\\ \bullet Ipratropium nebs\\ \bullet Steroids\\ \bullet Magnesium IV\\ \bullet Antibiotics if evidence ofinfection\\ \end{array}$	yspnoea /heeze sthmatic	Asthma exacerbation	
COPD exacerbation •Dyspnoea •Cyanosis, tachypnoea Clinical diagnosis •Salbutamol nebs •Wheeze •Use of accessory muscles •CXR: exclude infection and pneumothorax •Ipratropium nebs •Change in sputum •Polyphonic wheeze •Reduced air entry •ABG: hypoxia, hypercapnoea •Attibiotics •BiPAP if required	s, tachypnoea accessory muscles d air entry s, tachypnoea eCXR: exclude infection and pneumothorax •ABG: hypoxia, hypercapnoea •BiPAP if required	yspnoea /heeze nange in sputum nown COPD or lifelong smoker	COPD exacerbation	
Other Extrinsic allergic alveolitis; laryngitis; bronchitis; pneumonitis; bronchiectasis; LRTI respiratory differentials	pneumonitis; bronchiectasis; LRTI	rinsic allergic alveolitis; laryngitis; brc	Other respiratory differentials	

Cardiac	ACS	 Crushing central chest pain Radiates to neck/left arm Associated nausea/SOB/sweatiness Cardiovascular risk factors 	May be normal General: sweaty, SOB, in pain CVS: S4 gallop, JVP distension, signs of heart failure, brady/tachycardic	<u>ECG</u> : ST elevation (or new LBBB), inverted T waves, Q waves <u>Troponin</u> : increased (but normal in unstable angina) •CXR: normal or signs of heart failure •Coronary angiography	MONAC Primary coronary intervention
	Acute LVF	•SOB, orthopnoea, PND •Pink frothy sputum •Peripheral oedema •Cardiac history	Tachycardia, tachypnoea Raised JVP Fine bi-basal crepitations S3 gallop rhythm Peripheral oedema	CXR: Alveolar shadowing, B – lines, Cardiomegaly, Diversion of blood to upper lobe, Effusion <u>Echocardiogram</u> •BNP •ECG: look for MI	•Furosemide •GTN infusion •CPAP if required •Treat cause (if any)
	Other cardiac differentials	Cardiomyopathy; myocarditis; acute v	valvular disease; pulmonary hypertension	n	

Other	Hyperventilation in anxiety	 Tight chest pain, SOB, sweating, dizziness, palpitations, feeling of impending doom Anxious personality & other symptoms of generalised anxiety disorder Recurrent episodes triggered by a stimulus (e.g. crowds) 	Usually normal Hyperventilation	Clinical diagnosis •ECG: exclude MI •Troponin: exclude MI •CXR: exclude infection •ABG: respiratory alkalosis	Reassurance CBT		
	Other differentials	DKA; overdoses; metabolic acidosis; sepsis/SIRS; foreign body; anaphylaxis					