Pulmonary/ICU Jeopardy

Salty Skin	Worker's Wheeze	Poison Problems	Critical Conundrums	In the nose bleed section
$100	$100	$100	$100	$100
$200	$200	$200	$200	$200
$300	$300	$300	$300	$300
$400	$400	$400	$400	$400
$500	$500	$500	$500	$500

Final Jeopardy

Salty Skin- $100

A 35-year-old man is evaluated for chronic cough. He has had multiple courses of antibiotics and recurrent sputum cultures revealing pseudomonas in the past 12 months. His symptoms have been present for many years and are associated with sinusitis and infertility. CXR reveals upper-lobe bronchiectasis. Which of the following statements is ***TRUE*** regarding sweat chloride testing?

A. A negative sweat chloride test rules out CF
B. In 2018 all 50 states in US now screen newborns for CF
C. There are only 200 gene mutations that cause CF
D. Cystic fibrosis has autosomal dominant inheritance

Salty Skin - $200

A 50-year-old man presents with recurrent pneumonia and productive cough after horseback riding for years. His baseball hat has a crust of salt on its brim. You order sweat chloride tests x 2 which are indeterminant. Which of the following is the next step in diagnosis of cystic fibrosis?

A. Nasal potential difference measurements
B. Order fecal elastase to evaluate for pancreatic insufficiency
C. Perform CFTR gene sequencing
D. Order genetic counseling for a detailed pedigree

Salty Skin - $300

Your 18 year-old CF patient is admitted with an exacerbation and sputum culture grows *Aspergillus* and *Burkholderia cepacia.* Her FEV1 at baseline is 25%. She has been admitted 4 times in the last year with pulmonary exacerbations and her BMI is 17. Which of the following is a ***contraindication*** for lung transplant at most centers?

A. BMI of 17
B. Her FEV1 is too high and should be <20%
C. Colonization with *Aspergillus* species
D. Colonization with *Burkholderia cepacia*

Salty Skin- $400

Macrolide antibiotics dosed three times a week are often used for their anti-inflammatory effects in cystic fibrosis patients. In which of the following patients is a macrolide contraindicated for this purpose?

A. A 25 year-old man with sputum growing Pseudomonas aeruginosa
B. A 25 year-old man with sputum growing Mycobacterium avium complex
C. Both patients
D. Neither patient

Salty Skin - $500

CFTR modulator therapy for CF is becoming mainstay therapy for cystic fibrosis. It is indicated for patients with CF who have specific gene mutations. Ivacaftor was the first drug to modulate the CFTR. Which of the following was not a finding in the clinical trials of Ivacaftor?

A. Improvement in FEV1 by 10% in 2 weeks time
B. Sweat chloride testing reverting from positive to negative
C. Decreased hospitalizations by 19% in 6 months
D. Improvement in male fertility

Worker's Wheeze- $100

A patient presents to your clinic for complaints of shortness of breath and nonproductive cough for 2 months. You obtain a complete history including occupation, type and extent of exposure, and are worried about occupational lung disease. This is the first thing you do to evaluate this patient's health risks associated with their work.

A. Refer to an occupational and environmental lung disease specialist
B. Request a Material Safety Data Sheet from the patient's employer
C. Order complete pulmonary function tests
D. Tell the patient to take 1 week off work to see if their symptoms improve

Worker's Wheeze - $200

Which of the following chemical exposures is matched to the correct occupational risk?

A. Asbestos; Roofer
B. Berylliosis; Machine Operator
C. Silicosis; Sandblasting
D. A and C
E. All of the above

Worker's Wheeze - $300

A 73 year-old man is evaluated for chronic cough, weight loss, and night sweats. He has a 40 pack year history of smoking and worked as a miner in a quartz mine for 20 years in the 1950s. On physical exam he appears ill with temporal wasting. Lung exam reveals bilateral upper lobe crackles and cardiac exam is unremarkable.

Chest x-ray reveals bilateral upper lobe fibrosis with volume loss of the upper lobes and cavitation, traction of the hila upwards bilaterally and bilateral calcified hilar adenopathy. Which of the following is the most appropriate next step?

A. Aspergillus IgG antibody test
B. Bronchoscopy with transbronchial biopsy
C. High resolution CT scan of the chest
D. Sputum sample for acid-fast bacillus

Worker's Wheeze - $400

A 74 year-old man is evaluated for 6 months of progressive dyspnea on exertion. He was a construction worker between 1972 and 1986 and often in buildings with high levels of dust without respiratory protection. He is an avid wood worker and has a shop in his garage. He has never smoked. He has no other medical problems and takes no medications.

Physical exam is normal with the exception of inspiratory crackles at the bilateral lung bases. Spirometry shows FEV1 80%, FVC 85%, and DLC0 of 75%. CT scan shows pleural plaques, peripheral and basal predominant septal line thickening without ground-glass opacities, micronodules, or honeycombing. Which of the following is the most likely diagnosis?

A. Asbestosis
B. Chronic hypersensitivity pneumonitis
C. Idiopathic pulmonary fibrosis
D. Respiratory bronchiolitis-associated interstitial lung disease

Worker's Wheeze- $500

There are six factors that, if all are present, predict the diagnosis of hypersensitivity pneumonitis with 98% specificity. The first factor is ***antigen exposure.*** Which of the following is NOT one of the remaining five factors?

A. Positive precipitating antibodies
B. Recurrent episodes
C. Inspiratory crackles
D. Symptoms 4-8 hours after antigen exposure
E. Fever

Poison Problems - $100

You admit a heavy alcohol user to the VA for a foot wound. History reveals that he drinks a 12-pack of beer a day and occasional hard liquor shots. On chart review, you see several previous admissions for alcohol withdrawal. You start the patient on MSAS protocol and the nurse calls you to tell you that the patient is agitated and hallucinating despite 50 mg of IV diazepam over the past 3 hours.

Which of the following is the most appropriate next step in management?

A. Switch to IV lorazepam
B. Order a beer for the patient stat
C. Start to IV phenobarbital
D. Add IV haldol prn

Poison Problems - $200

A 79 year-old woman is brought to the ED after she was found unconscious in her apartment by a neighbor. She had been using a propane fueled heater to heat her small apartment. No other medical history is available. On exam, BP is 100/64, HR is 70, RR is 16, pulse ox shows 100% oxygen saturation on mechanical ventilation using 50% oxygen. She is unresponsive to pain or voice but has intact normal deep tendon and brainstem reflexes.

Co-oximetry shows a carboxyhemoglobin level of 50%. CT of the head shows no acute changes. Which of the following is the most appropriate treatment?

A. Continue current management
B. Decrease oxygen to 30%
C. Hydroxocobalamin administration
D. Hyperbaric oxygen therapy

Poison Problems - $300

A 30-year-old woman is evaluated in the ED after she was rescued from her home where her vinyl sofa caught fire. She is intubated and unconscious.

On PE, BP is 108/78, HR is 100, RR is 24, 02 sat is 100% on mechanical ventilation using 50% oxygen. She is unresponsive. She has no visible burns on her skin and her airway secretions are clear. Brainstem reflexes are intact. Labs reveal a sodium of 140, potassium 4.4, chloride 99, bicarbonate 13.1. An ABG reveals a pH of 7.29, pC02 28, p02 of 233, Carboxyhemoglobin of 5%, Methemoglobin of 2%, and lactate of 11 mEq/L. The oxygen is increased to 100%. Which of the following is the most appropriate treatment?

A. Hydroxocobalamin
B. Hyperbaric oxygen therapy
C. Methylene blue
D. Sodium nitrite

Poison Problems - $400

A 38-year old woman is evaluated in the ED for unresponsiveness. On arrival, she was minimally responsive with miotic pupils and a respiratory rate of 4/min, but 5 minutes after administration of 2 doses of IV naloxone, her respiratory rate is 15, and she is awake, oriented, and able to converse. She does not remember what happened before her admission, but her history is significant for heroin use.

On PE, vitals are normal. O2 saturation is 99% on RA. Physical exam is unremarkable except for miotic pupils and signs of needle tracks. Which of the following is the most appropriate management?

A. Admit and order scheduled doses of naloxone
B. Admit to observation and observe for several hours
C. Discharge now with outpatient follow up
D. Admit to ICU for naloxone drip

Poison Problems - $500

Your patient who was admitted for pulmonary hypertension tells you that she takes alprazolam 1 mg tid for anxiety related to her shortness of breath. You are concerned about benzodiazepine withdrawal and so you continue this home dose in the hospital. The next day, she is somnolent and difficult to arouse, but wakens and opens her eyes to sternal rub. Her BP is 105/65, HR is 80, RR is 10, and her 02 saturation is 94% on her normal 3 liters of oxygen. When you check the PMP, you note that she is prescribed alprazolam 0.5 mg daily.

Which of the following is the most appropriate next step in management?

A. Give flumazenil
B. Transfer to the ICU for intubation
C. Hold alprazolam until she is awake
D. Head CT

Critical Conundrums- $100

A 2018 systematic review found that supplemental oxygen in patients with normal oxygen saturation increases mortality. Based on these results, an international expert panel provided two strong recommendations: 1) an SpO2 of ***96% or lower*** should be maintained in patients receiving oxygen therapy, and 2) oxygen therapy should not be started for patients with acute myocardial infarction or stroke and an SpO2 of 93% or higher.

There are a few caveats to this rule, and patients with each of the following conditions benefit from oxygen saturations of nearly 100% EXCEPT:

A. Sickle cell crisis
B. Pulmonary embolism
C. Pneumothorax
D. Carbon monoxide Poisoning

Critical Conundrums - $200

Anaphylaxis is a severe reaction caused by acute mediator release into the circulation, usually triggered by IgE-linked immunological responses to an antigen to which the patient has had a sensitization. An anaphylactoid reaction is not IgE mediated, but causes the same release of acute mediators.

Which of the following causes an anaphylactoid reaction and therefore can occur on the first exposure (without previous sensitization)?

A. Peanuts
B. Scorpion sting
C. Latex
D. Radiocontrast dye

Clinical Conundrums- $300

A 60-year-old man presents the ED for headache, nausea, vomiting, and confusions lasting 4 hours. He ran out of his 3 antihypertensive medications a few days ago. Blood pressure is 230/140, pulse is 100, and he is too uncooperative to perform a MMSE. Labs are significant for serum creatinine 1.6 (1.2 baseline). CT of the head is normal.

Which of the following is the most appropriate treatment?

A. IV hypertensive therapy to lower SBP to 160 within the first 6 hours
B. IV hypertensive therapy to lower SBP to 120 within the first hour
C. IV hypertensive therapy to lower SBP to 160 within the first 48 hours
D. Resume the usual oral antihypertensive regimen and observe

Clinical Conundrums - $400

A 61-year-old man is evaluated in the ED after he collapsed on a hot and humid day. He was playing in a marching band and had to stand in the sun for 2 hours while wearing a heavy uniform. No other medical information is available.

His temperature is 40 C (104 F), blood pressure is 90/45 mm Hg, HR is 110, and respiration rate is 20. He is flushed, somnolent, and although he is arousable, he is not coherent. There are no signs of trauma.

His clothing is removed. Which of the following is the most appropriate treatment?

A. Acetaminophen and a cooling blanket
B. Continuous alcohol sponge bath with cooling fans
C. Ice water immersion
D. IV dantrolene
E. Sprayed water and cooling fans

Clinical Conundrums- $500

A 19 year-old man is brought to the ED after he attended a party with friends. He is anxious and tremulous and has a history of depression. His only medication is fluoxetine.

On exam, he is alert and oriented, temperature is 38.9 C (102 F), blood pressure is 136/79, HR is 112, and RR is 20. 02 saturation is 98% on RA. PE is notable for slow, continuous horizontal eye movements, tremor of extremities, hyperreflexia, and sustained ankle clonus and spontaneous myoclonus. The rest of the exam is normal.

You suspect serotonin syndrome. Which of the following drugs did he likely use at the party?

A. Ethanol
B. Methylenedioxymethamphetamine (Ecstacy)
C. Marijuana
D. Heroin

Nose bleed section - $100

Your 50 y/o patient with a hx of well-controlled type 2 DM and HTN is planning a trip to Machu Picchu. He thinks he had symptoms of altitude sickness when he traveled about 5 years ago to Ecuador. Which of the following is NOT a key strategy to help prevent high altitude illness?

A. Ascend no more than 2000 feet per day
B. Spending a night at an intermediate altitude location
C. Use of acetazolamide
D. Supplemental oxygen

Nose bleed section - $200

A 30 y/o M is evaluated toward the end of 3500 M summit in the French Alps. He is confused and irritable. He has taken prophylactic acetazolamide, but stopped it because of nocturia. On physical exam, HR is 128/min and RR is 22/min. In addition to confusion, he has an ataxic gait. Neuro exam is otherwise non-focal. He is given supplemental O2 and descent is started.

What is the most appropriate additional treatment?

A. Acetazolamide
B. Dexamethasone
C. Nifedipine
D. Sildanefil

Nose bleed section - $300

A 68 y/o M develops acute onset of pleuritic, right-sided chest pain and dyspnea 90 minutes into a flight from Nashville to Phoenix. He is on week 2 of a prednisone taper for a recent COPD exacerbation in the setting of bullous emphysema. He is on 2L O2 at home which was increased to 4L for the flight. He is also on a LABA, LAMA and prednisone. On PE, BP is 138/78 mm Hg, HR is 114/min and RR is 24/min. He appears moderately distressed. He has diminished breath sounds b/l and expiratory wheezing. Cardiac exam is unremarkable.

Which of the following is the most likely diagnosis?

A. Acute bronchospasm
B. Peanut aspiration
C. Pneumothorax
D. Pulmonary embolism

Nose bleed - $400

Your uncle has COPD and wants to visit but is concerned about the 4 hour airplane ride to see you. You review the guidelines for assessing supplemental oxygen requirements during air travel for patients with chronic stable lung disease.

Which of the following patients should be prescribed supplemental oxygen during a commercial flight?

A. A patient with resting SP02 of 91% on RA
B. A patient with resting 02 saturation of 94% with desaturations to ≤ 90% on 6 minute walk
C. A patient on continuous 5 liters NC
D. All of the above

Nose bleed - $500

You and your intern decide to go to Humphrey's Peak on your day off to climb the highest mountain in Arizona (12,633 ft.) You start out feeling well because you've recently been on Orange team and climb daily to the 17th floor. However, soon you begin to feel significantly dyspneic and cough up pink frothy fluid. Your intern is alarmed and recommends quick descent. Which of the following therapies is most effective in addition to oxygen and rapid descent?

A. Furosemide
B. Nifedipine
C. Sildenafil
D. B and C
E. All of the above