

Location: Office.

Vital signs:

Pulse: 88/min, BP: 130/80 mmHg, Temperature: 100.0F, RR: 22/min, Height: 72", Weight: 64kgs.

HPI:

A 32-year-old previously healthy male who is an immigrant from INDIA presents to your office with 6 weeks history of fatigue, low-grade fever and dry cough. Recently he noticed increasing cough with yellowish sputum since 1 week. He says his appetite is decreased, and have unintentional loss of around 10 lbs of weight during this period. He denies and shortness of breath or hemoptysis. He has been smoking 1 pack per day cigarettes since 10 years, but denies alcohol intake. He has no other medical problems. Family history is nothing significant. He has no known allergies. Rest of the review of systems is unremarkable. He is sexually active in a monogamous relationship with his wife and uses condom always. His immunizations are up-to-date.

How do you approach this case?

This is a 32-year-old INDIAN male with 6 weeks history of fatigue, low-grade fever, dry cough and weight loss. The possible diagnosis in this may be due to pulmonary tuberculosis (most likely), fungal infections, HIV, carcinoma of lung (age is little atypical), chronic bronchitis, and bronchiectasis. Chronic cough may be due to postnasal drip, asthma, GERD, medications (ACE inhibitors), and some rare causes. However, fever and weight loss makes postnasal drip, asthma, GERD, and medications unlikely.

Order physical examination:

Complete examination

Findings on exam:

General appearance: Thin built male appears comfortable. HEENT: Normal conjunctiva, anicteric sclera, moist mucous membranes; there is no JVD or lymphadenopathy. Lungs: Distant hollow breath sounds and posttussive rales are heard over the right upper lobe. Decreased breath sounds and dullness to percussion is noted at the base of right lung. Cardiovascular, abdomen, and CNS examination is completely normal. Extremities: No edema, clubbing or cyanosis, no calf tenderness; peripheral pulses are full.

Order labs:

CBC with diff, routine
BUN, routine
Serum creatinine, routine
Chest x-ray, PA and lateral views, routine
Sputum examination for gram's stain, and AFB
Sputum culture and sensitivity
ESR, routine
EKG 12 Lead, routine

Here are the results:

CBC: Hb: 13gm%, Hct: 40%, WBC: 12,000/Cmm with normal differential, Platelets: 230,000/cmm. Peripheral smear: Normal
BUN: 10mg/dL; serum creatinine: 0.9 mg/dL.
Chest x-ray: Right apical cavity with small pleural effusion and right hilar adenopathy.
Sputum examination: AFB is positive for rod shaped bacilli suggestive of Mycobacterium tuberculosis.
Culture and sensitivity results are pending.
EKG: Normal sinus rhythm.

Review of orders:

Admit to Ward

LFT, routine

Serum uric acid, routine

Ophthalmology consult. Reason: Assessment of visual acuity and other abnormalities before starting ethambutol.

Results:

LFTs are within normal limits.

Serum uric acid is normal

Ophthalmology consultation: Normal ocular study

Order review:

INH, oral, continuous*6months

Pyridoxine oral, continuous*6months

Rifampin oral, continuous*6 months,

Pyrazinamide oral, continuous*2 months

Ethambutol, oral, continuous*2months

Counseling:

Patient counseling

Reassurance

Smoking cessation counseling

No illegal drug use

Regular diet

Medication compliance

Notify public health department

Repeat AFB until 3 consecutive smears are negative

Change location to home and fix appointment after 15 days

Then order brief history and focused examination

Order review:

Continue same medication.

Fix appointment each month and check LFT.

Repeat chest X-ray in one month to see pleural effusion is coming down or not.

Primary diagnosis:

Pulmonary tuberculosis

Discussion:

Tuberculosis is not uncommon in USA because of the immigrants from disease prevalent countries (INDIA, China, Africa). It is also common among populations like malnourished, homeless, in those living in overcrowded situations and in immunocompromised patients. Tuberculosis is caused by acid-fast bacilli *Mycobacterium tuberculosis*. The most common variant is the pulmonary form. In patients with impaired CMI, active primary tuberculosis occurs with pulmonary and constitutional symptoms like fatigue, decreased appetite, weight loss, fever, night sweats and cough. Once the pulmonary form occurs, the disease spreads to other parts of the body by hematogenous spread. Atypical presentation occurs especially in elderly and HIV positive patients.

The disease is mainly diagnosed by chest x-ray, which often shows apical or right middle lobe infiltrates (cavity) with or without pleural effusion, and sputum examination for AFB; ESR will be elevated but it has no diagnostic value. Patients usually have positive PPD test. Positive PPD is not diagnostic in symptomatic patients as it indicates both active and latent infection. Culture of mycobacterium is possible but takes several weeks and treatment can be started without the results.

The standard treatment involves administration of 4 medications (INH, Rifampin, Pyrazinamide and Ethambutol) for 2 months followed by 4 months of 2 drugs (INH and Rifampin). The main cause of treatment failure is non-adherence, which can be improved by patient education and directly observed therapy (DOT) by a health care worker. Inpatient

therapy is usually recommended and should be in an isolated room with good ventilation until 3 consecutive smears are negative for bacilli and clinical improvement is noted. Outpatient management is considered if there are no immunocompromised members or children under four years of age at home.

All the antitubercular drugs cause hepatic impairment, in addition INH causes pyridoxine deficiency leading to central and peripheral neuropathy, which can be prevented by oral pyridoxine. Monitoring of liver function tests should be individualized. Even though there is no specified interval by CDC, it is recommended that patients should be seen by a physician at least once monthly and measure liver function tests. Ethambutol causes visual acuity disturbances and optic neuritis; hence many physicians obtain ophthalmology consultation before treatment. Rifampin causes orange discoloration of body fluids; pyrazinamide causes hyperuricemia leading to joint pains but most often it is asymptomatic. Many physicians recommend a baseline testing of uric acid before starting pyrazinamide. Routine follow-up measurement of serum uric acid is not required unless patient has a history of gout or receiving medications that alter uric acid metabolism such as loop diuretics. All drugs are safe in pregnancy except streptomycin and special consideration to be taken while using pyrazinamide in pregnant patients, as teratogenicity is not clearly defined.

Therapy in HIV positive patients is similar to HIV negative patients except for a longer duration with DOT and to watch out for drug interactions. All cases should be reported to public health authorities.

Note: All patients should have a baseline CBC with diff, BUN, serum creatinine, LFTs, chest-x ray and serum uric acid.

This copy of the material is licensed to HAFIZ MUHAMMAD ALI RAZA.
Copyright © 2014. All Rights Reserved www.usmleworld.com