IPE Case study

Paul, a 68 year-old male, was admitted to hospital from a local night hostel for the homeless. He has been homeless for approximately 5 years and uses the night hostel when there is availability. He has lost contact with family and friends. He has experienced dyspnea (shortness of breath) and a cough for 3 weeks. Four days ago he attended the accident and emergency department where he was diagnosed with a COPD exacerbation. Although he was prescribed azithromycin, his symptoms have not improved after 3 days of antibiotics and he feels 'much worse'. His current symptoms are fever, chills, cough (sometimes productive), sweating - particularly at night - and dyspnea. He has a history of dyslipidemia (abnormal amount of lipids in blood), alcoholic cirrhosis, COPD and hypertension. He has smoked cigarettes for the past 35 years, approximately, 10 cigarettes daily. He is prescribed lisinopril (a medication of the angiotensin-converting enzyme inhibitor class used to treat high blood pressure, heart failure, and after heart attacks), atorvastatin, tiotropium and fluticasone/salmeterol, and has recently had a heavier reliance on his salbutamol inhaler.

He is awaiting a chest x-ray. A sputum sample was sent to the microbiology laboratory for testing and bloods have been sent to Haematology and Biochemistry for full Blood Count and renal function tests.

Review of Systems

General	looks older than stated age
HEENT	Mildly icteric, pupils equally round and reactive to light and accommodation (examination of head, eyes, ears, nose, and throat)
Neck	Supple (flexible)
Resp	Coarse breath sounds, rhonchi and wheezes heard throughout
Card	Regular rate and rhythm, no murmurs, rubs, or gallops
Abd	Slightly distended
Ext	No oedema
Skin	Excoriated (damaged), otherwise normal
Neuro	normal

Laboratory Results
higher
normal
low

Biochemistry	Haematology
Creatinine: **1.6** (RR 0.6-1.2 mg/dL)	
	WBC: **19.9** (RR 4.0-10.0 x10^9/L)
Na: **141** (RR 135-145mmol/L)	Neutrophils **16.2** (RR 2.0-7.0 x10^9/L)
	Lymphocytes **1.8** (RR 1.0-3.0 x 10^9/L)
	Monocytes **1.7** (RR 0.2-1.0 x 10^9/L)
	Eosinophils **0.08** (RR 0.02-0.5 x 10^9/L)
	Basophils **0.03** (RR 0.02-0.1 x10^9/L)
	Hgb: **108** (RR 133-167 g/L)
K: **4.2** (RR 3.8-5.0mmol/L)	
	MCV **103** (RR 77-98fL)
Cl: **98** (RR 95-108 mmol/L)	Hct: **0.36** (RR 0.35 – 0.53 L/L)
Bicarb: **23** (RR 24-29mmol/L)	Platelets: **115** (RR 150-400x10^9/L)

Microbiology

Sputum description - purulent

Sputum culture +++ respiratory commensals

Mycoplasma PCR - <mark>*mycoplasma pneumoniae*</mark> – detected

Microbiology Serum sample

Mycoplasma IgM – antibodies detected

Mycoplasma pneumoniae
https://www.cdc.gov/pneumonia/atypical/mycoplasma/index.html
Atypical bacteria causing mild pneumonia ('walking pneumonia), which in some cases may worsen and hospitalisation is required. It damaged the lining of the respiratory system. The incubation time is about 1-4weeks. Most of these infections are self-limiting.

Baseline observations

Temperature	**38.5°c**
Heart Rate	**89** bpm
Respiratory Rate	**18** rpm (12-20)
Blood Pressure	**140**/**86**mmHg
Oxygen Saturation	84% on room air, 98% on 4L nasal cannula

Learning outcomes

Learning outcome 1: Explain the interrelationship between the patient's personal medical history and his diagnosis.

Learning outcome 2: With reference to this patient, discuss the roles and principles of the tests used for the evaluation of this condition.

Learning outcome 3: Discuss the pathophysiology of COPD.

Learning outcome 4: Explain the action of the medication used to manage this patient's current condition.