



Clinical round in Medicine

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**Pyrexia of unknown origin
PUO**

PUO (Etiology)

- **Definition:** The definition of PUO is a temperature over 38.3°C for longer than 3 weeks with no obvious source despite investigation.
- **Causes of PUO can be divided into:**
 1. Infection (25%).
 2. Malignancy (20%).
 3. Inflammatory/Rheumatological diseases (20%).
 4. Miscellaneous (15%).
 5. Unknown.

Infections (25%)

Condition	Key points	Pneumonia	
Tuberculosis	Cough Night sweats (drenched) Haemoptysis Weight loss Tuberculosis contact South Asian Spiking fever Temperature chart looks like a zig-zag line	Urinary tract infection Intracerebral – meningitis, encephalitis, abscess HIV	Elderly Alcohol Previous tuberculosis Smoking Immunosuppression Frequency Dysuria Haematuria Delirium Cognitive \pm neurological features Lumbar puncture CT brain Non-specific symptoms Opportunistic infections Endemic area Risk factors Abdominal pain Jaundice Alcohol Obesity Intravenous drug user Foreign travel Malaria prophylaxis (compliance) Immunisation history Consider the wider public health aspect also (contacting the CCDC, notifiable diseases)
Abscess			
Endocarditis	New murmur and fever Weight loss Anaemia Embolic phenomena (stroke) Janeway lesions Osler's nodes Splenomegaly Prosthetic valve Intravenous drug use Requires blood cultures and transoesophageal echocardiogram	Hepatitis	
Osteomyelitis	Pain, tenderness Swelling Heat	Tropical infections	
Pneumonia	Elderly		

Neoplasms (20%)

Condition	Key points
Lymphoma	Tiredness Lymphadenopathy Night sweats Pruritus Weight loss
Leukaemia	Bruising Infections Anaemia

Photosensitivity

Mouth ulcers

Arthralgia

Young women

Giant cell arteritis

Elderly

Associated with polymyalgia rheumatica

Headache

Temporal tenderness

Jaw claudication

Amaurosis fugax

Morning stiffness in the proximal limb muscles

Tiredness

Anorexia

Weight loss

Joint pain and swelling

Salmon pink skin rash

Fever peaks in afternoon

Connective tissue disease (20%)

Condition	Key points
Rheumatoid arthritis	Symmetrical Swollen Painful Small joints of hands (metacarpophalangeal, proximal interphalangeal)
Systemic lupus erythematosus	Non-specific symptoms (malaise, tiredness) Weight loss Alopecia Malar rash

Polymyalgia rheumatica

Still's disease

Miscellaneous (15%)

Condition	Key points
Drug fever (3%)	Beta-lactam antibiotics (penicillin) Isoniazid Sulphonamide (sulphasalazine)
Pulmonary embolism	Shortness of breath Chest pain Haemoptysis Recent surgery, immobility
Inflammatory bowel disease	Abdominal pain Weight loss Diarrhoea (ulcerative colitis – bloody)

Occupation-associated illness

Occupation	Condition
Sewage worker	Leptospirosis
Farm worker	Zoonosis
Healthcare worker	Hepatitis, HIV
Forestry worker	Lyme disease
Abattoir workers	Q fever (<i>Coxiella burnetii</i>)

Examining patients with PUO

Examining a patient with a PUO **involves a thorough examination focusing on possible causes** that were highlighted within the history.

Pay particular attention to the

- 1. Patient's skin.**
- 2. Mucous membranes and lymphatic system.**
- 3. The presence of abdominal masses.**

Key investigations for patients with PUO

- Be able to justify each test based on your history, examination findings and likely differential diagnosis:
- **Bedside tests:** measure the **temperature!**
- **Full blood count, white cell count and differential, U&Es, C-reactive protein, liver function tests, ESR, blood film, amylase.**
- **Blood cultures** (×3, taken at different times from different sites using an aseptic technique.)
- **Urine microscopy, culture and sensitivity.**
- **Swabs** (throat, ear, penile, high vaginal/ endocervical).
- **Autoantibody screen** – antinuclear antibody, ANCA, rheumatoid factor
- **HIV test, PPD, interferon-gamma release assay for TB.**
- **Chest X-ray.**
- **Abdominal ultrasound scan.**
- **CT/MRI** – the site will be dictated by what you find from your history and examination.

Brucellosis

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Brucellosis

- Gram, -Ve aerobic coccobacillus (Which can form granulomatous reaction).
- Look for Exposure to **unpasteurized milk or uninspected meat**
- Systemic symptoms include **fever**, which is **usually prolonged and intermittent (undulant), chills, weakness, malaise, body aches, sweating and headache**.
- Undulant means in **waves rising and falling pattern**.
- Brucellosis may also involve the **liver, heart (endocarditis) and central nervous system (meningitis)**.
- Diagnose with **culture of blood, CSF, urine, marrow**.
- Treat with **doxycycline and gentamicin**. Add **rifampin for bone and heart infection**.

Brucellosis types

Spread of Brucellosis

These names are based on the infected animals



Pig

B. Suis

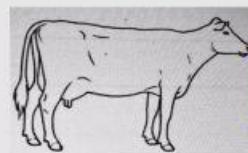
High Pathogenecity



Dogs

B. Canis

Modertae Pathogenecity



Cattle

B. Abortus

Modertae Pathogenecity
Cause abortion in cows



Sheep

B. Mellitensis

High Pathogenecity



Thank you

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