

PUO Guideline by
Dr A Abdurrazaq

Definition :

Fever of unknown origin refers to the presence of a documented fever for a specified time, for which a cause has not been found after a basic medical evaluation.

History

Fever:

- Thermometer used ,
- its type,
- factitious,
- site ,
- core or peripheral

Pattern:

Continuous:


Temperature remains above normal throughout the day and does not fluctuate more than 1 °C in 24 hours (meningitis, encephalitis, Lobar pneumonia, typhus fever).

☐ Remittent:

Temperature remains above normal throughout the day and fluctuates more than 1 °C in 24 hours (Endocarditis,brucellosis).

□ Intermittent:

Temperature elevation is present only for a certain period, later cycling back to normal (Tertian fever in *Plasmodium vivax* , *ovale* & *falciparum*. Quartan fever in *P. malariae*, TB , JIA),



Another class of intermittent fever is

Pel-Ebstein fever weeks high for one week
and low for the next week and so on



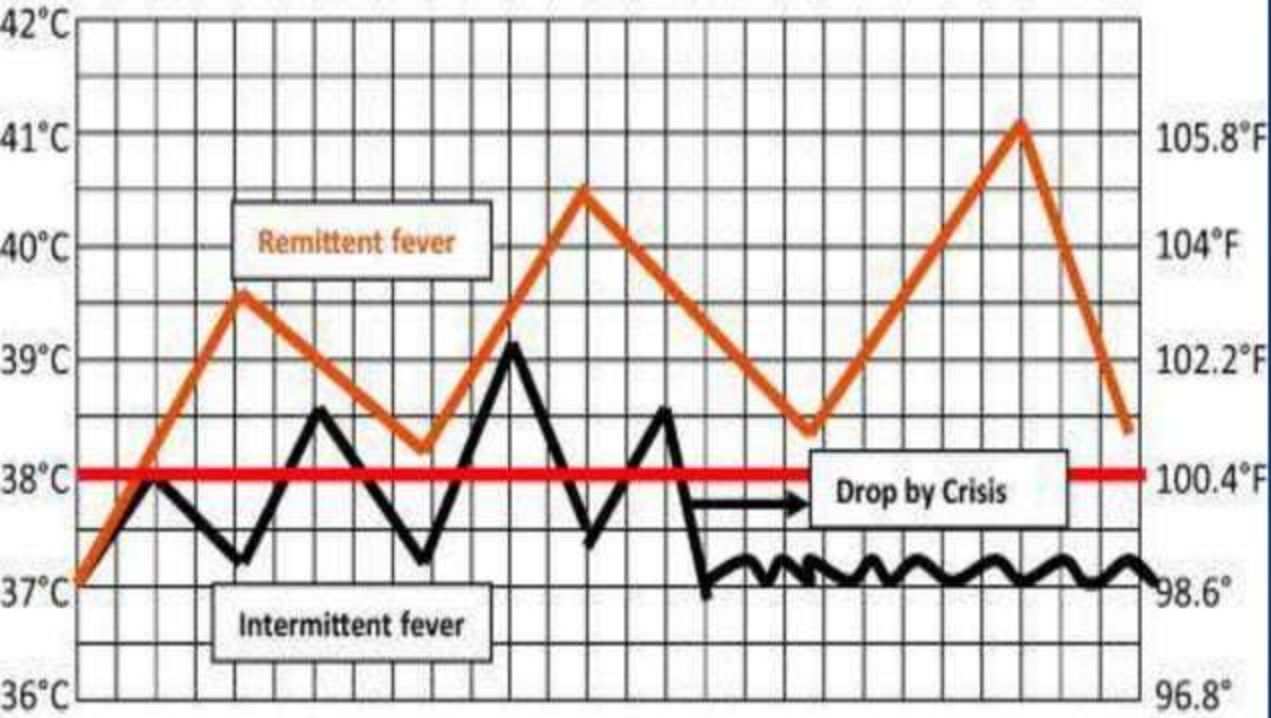
□ Undulant Fever:

Rising & falling like a wave (Brucellosis)



□ Cyclical fever:

usually every 3 weeks
(cyclic neutropenia & Hyper IgD).



Height & Duration:

Temperature below 38.5 intermittent is usually due to Viral infection .Temperature above 40 is a pediatric emergency.(Infectious causes: septicaemia,ruseola, measles. Non infectious: Kawasaki disease, malignant hyperthermia, drug fever ,rarely intracranial Hge).



Response to:

paracetamol and or NSAID
(no response: dysautonomia)

Associated symptoms:

- ❖ *Nasal discharge*(Sinusitis),
- ❖ Red eyes(Kawasaki),
- ❖ GI (IBD ,Salmonella,Abcesses), Recurrent pharyngitis with ulcers (Periodic fever) in people of Mediterranean origin (FMF),
- ❖ Salmon rash only during fever (JIA),
- ❖ Limb pain (leukaemia, osteomyelitis,JIA

Other part of the history:

- History of travel to TB-endemic region (Pakistan, India, China, Nigeria,) Malaria endemic regions (central & south America, Haiti, Africa).
- Prophylaxis & immunization
- History of contact with cat, sheep, dog, monkey
 - Bites (tick: arbovirus, malaria)
 - Meat: undercooked (brucella, toxoplasma, hepatitis)
 - Pica (visceral larva migrans, toxoplasmosis)



➤ Drug history:

All including non -prescription (Drug fever),
Antibiotics eg cephalosporin, penicillin, Phenytoin can
all cause drug fever.

➤ Ethnicity:

Sephardic Jew, Armenian, Turkish, Arab (Familial
Mediterranean Fever), Ashkenazi Jew (Riley-Day
Syndrome).

Examination:

➤ ENT:

- Sinuses
- Lymphadenopathy (Malignancy, EBV, CMV)
- Red, no exudates (EBV)
- Dental abscess
- Conical teeth (ectodermal dysplasia)
- Smooth tongue (dysautonomia)
- Gum hypertrophy, tooth loss(leukaemia, histiocytosis).



➤ Eyes:

- Conjunctivitis
- palpebral (infectious mononucleosis)
- bulbar (Kawasaki) ,Phlyctenular (TB)
- Retinopathy (PAN, miliary TB, toxoplasmosis, vasculitis)
- Pupil dilation (hypothalamic or autonomic dysfunction)



Skin

- Rash only during fever (JIA)
- No sweat (familial dysautonomia)
- Petechiae (endocarditis, rickettsia)
- Papules (cat scratch)
- Eschar (tularemia)
- Erythema migrans (Lyme)
- Malar (SLE)
- Palpable purpura [polyarteritis nodosa (PAN)]
- Erythema nodosum (JIA, SLE, streptococcal, infection, malignancy, IBD, TB)
- Seborrheic dermatitis (histiocytosis)
- Sparse hair (ectodermal dysplasia)

➤ Chest & Cardiovascular:

- Murmur (Endocarditis or left atrial myxoma)
- Crackles (lobar pneumonia)

➤ Abdominal:

- Hepato/spleno-megally (salmonella, cat scratch, endocarditis, malaria),
- point tenderness (Intra-abdominal abscess).

➤ Genito-urinary:

- Girls – Pelvic tenderness (child sex abuse – STI)



Musculo-skeletal:

Tender:

- Bone (osteomyelitis, malignancy)
- Muscle (trichinella, arbovirus, dermatomyositis)
- Trapezius (subdiaphragmatic abscess)

Reflexes:

- Brisk (hyperthyroid)
- Absent (dysautonomia)

Investigation:

➤ Basic Investigation:

FBC, ESR, CRP, U&E, LFT,
blood culture,
urinalysis, urine & stool culture,

CXR, X-ray sinus cavities

➤ *2nd line Non –invasive Investigations:*

- Viral cultures,
- Serology for (brucellosis,weil felix for rickettsia,widal test for salmonella, leptospiral & herpes group viruses)
- ANA,C3,C4 , C-ANCA ,Ig G,A,M,D, &E levels with subsets,
- TB Quantiferon.
- USS (Abdo,pelvic ,chest & lymph node).
- EBV & CMV titres.
- Ophthalmologist review

➤ *Selective Investigations:*

- CT or MRI (Abdo & Head) ,
- Bone scan ,
- Tissue, lymph node or bone marrow biopsy.
- ECHO,
- PCR for HIV,
- DNA analysis for fabrys disease .
- PET Scan ,
- White cell scan.

➤ *Management:*

Empirical Antibiotics :

Ceftriaxone or cefotaxime if critically ill or fever in less than 3 months.

TB treatment after lymph node biopsy, induced sputum or TB sputum culture.

Overall it is good practice to avoid antibiotics until an organism is isolated.

Referral

- Gastroenterologist –IBD ,
- Rheumatology –JIA ,CTD
- Oncologist- Leukemia
- Cardiologist-Endocarditis, Left atrial Myxoma
- ID – TB, Brucellosis, Salmonella, HIV

HEY, LET'S NOT DWELL
ON THE NEGATIVES
HERE, **OKAY?** SEVERAL
PARTS OF YOUR
SURGERY **WERE**
DONE CORRECTLY.

