REUMATOLOGY
INFECTOUS DESEASES
ABDOMINAL PAIN
HAEMATOLOGY
HEADACHE
LEG PAIN
RANDOM CASES

Case

you are a GP and a 48 year old male comes in complaining of severe foot pain since 2 days.

- TASK
  - History taking
  - PEFE
  - Diagnosis and differentials
  - Management

Differential diagnosis

- Pseudogout
- Gout
- Septic arthritis , Osteomyelitis
- Cellulitis , insect bite
- Mørton's neuroma
- Plantar fasciitis
- Trauma
- OA, RA

History taking

- Acknowledge concern
- HOPC (SIQORA-1)
  - Site? Since when?
  - Severity? Offer painkillers after ruling out allergies
  - Quality ?
  - Onset? Sudden or gradual? On/off or continuous?
  - Radiation?
  - Aggravating or relieving factor?
  - 1st time?

- Associated symptoms and differentials
  - Any swelling? redness? Fever?
  - Any pain while moving?
  - Any rash, trauma or insect bite?
  - Any pebble like sensation?
  - Any morning stiffness?
- SADMA-HOT
  - Alcohol +
  - Red meat, sea food +
- PMHX or PSHX
- FHX of any joint problem or gout

PEFE

- G/A
  - PICCLED-BMI
  - Distresed due to Pain
- vitals
- CVS
- Respiratory exam
- Abdominal examination
- Foot examination
  - Look – swelling, redness base of big toe (picture given), rash, any trauma or insect bite
  - Feel – temperatura, tenderness, pulse, CRT, point tenderness
  - Move – range of joint movements painful
  - Special test- windlas test, mulders sign + click
- Office tests

- There could be many reasons for your foot pain but from your history and examination you most likely have a condition called as gout. It is a form of inflammation of joints due to deposition of monosodium urate crystals in people with high levels of uric acid in blood. Picture of your big toe is also consistent with gout. I found some risk factors in you like alcohol intake, red meat and more fish intake.
- Common condition that can run in families. Certain conditions like HTN,DM, High Cholesterol can be associated with gout.
- If attacks are frequent , there can be permanent damage of the joints
- Needs further investigation:
  - FBE, ESR, CRP, lipids, UEC, LFT, X-ray of lower limbs
  - Joint aspiration once acute phase is resolved

- Immediate treatment plan
  - Avoid driving for 2-3 days
  - Take more fluids
  - INDOMETHACIN
  - Panadol
- Long term
  - SNAP
  - Dietician for weight loss
  - Cut down on red meat and fish
  - After 8 weeks put on Allopurinol 50-100 mg → 300 mg
  - Review in 4 weeks

Case

you are a GP and your next patient is a Middle age lady who you saw last week for pain and stiffness in hand for a long time. U had put her on diclofenac and Some blood tests were done and shows Rh Factor positive, anti CCP positive, FBE – normal. Her mom has RA and now she is on medication.

- Tasks
  - Explain results to the patient
  - most likely diagnosis and course of the disease
  - Discuss initial management plan with patient

- Summarise
- Any joint pain at the movement?
- Explain results and diagnose as rheumatoid arthritis.
- Rheumatoid arthritis is an autoimmune disease. Our body has a immune system to fight against infections. But in autoimmune disease, immune system attacks our own body tissues. In RA, it attacks joints, especially small joints of hands and feet.
- Exact cause is not know but is found to run in families as in your case your mum also has RA . It can not be cured but can be controlled by using a special medicine called as DMARDS. You would need referral to the specialist and a regular f/u because if not controlled well can lead to joint destruction.
- If acute pain now- PRICE

Case

you are a GP, your next patient is 57 year old lady c/o pain on her shoulder for past 4 months

- TASK
  - History taking
  - Investigation
  - Diagnosis and differentials
  - Management

Differentials

- PMR
- Cervical spondylosis
- Fibromyalgia
- Trauma
- Myasthenia gravis
- Malignancy
- SLE

History taking

- Acknowledge concern
- HOPI (SIQORA-1)
  - Any pain at the movement? Offer painkillers
  - Since how long? 4 months
  - Site? Unilateral or bilateral?
  - Intensity ? Around 6
  - Gradual, on/off or continous
  - dull aching
  - No radiation
  - 1st time?
  - How is it affecting your daily life?

- Associated symptoms and differentials
  - Pain anywhere else in the body? Hip pain
  - Fever ? Any rash ?
  - Any joint stiffness ?
  - Any headache? Jaw claudication?
  - Any trauma to your shoulders?
  - LOW, LOA, lumps and bumps
- P5
- SADMA-HO
- PMHX, PSHX
- PFHX

- Investigations
  - FBE, ESR, CRP
  - X-ray
  - Alkaline phosphatase/CK
- Diagnosis
  - From your history and investigation you most likely have a condition called as polymyalgia rheumatica . It is an autoimmune disease. Our body has a immune system to fight against infections but in autoimmune disease, immune system attacks our own body tissues like in your case shoulders and hip joint. Cause is unknown .
- Management
  - Rest
  - Hot pads, massage
  - Pain killers
  - Prescribe low dose steroids (15 mg OD) for 2 to 4 weeks
  - Referral to rheumatologist
  - Red flags for temporal arteritis

Case

you are an HMO in ED, 60yr old female comes with complaints of severe headache for past 2 weeks.

- TASK
  - History taking
  - Diagnosis and differentials

History

- Acknowledge concern
- Offer pain killer after ruling out allergies
- Pain questions (SIQORA-1)
  - Site? Temporal area
  - Severity?
  - Quality ? What type of pain do you get? Throbbing pain
  - Onset? Gradual or sudden? On/off ? Progressively getting worse?
  - Radiation?
  - Aggravating and relieving factor?

- Associated symptoms
- DD questions
  - Any recent infection? Any facial pain?
  - Any neck stiffness?
  - Any vomiting, photophobia, one sided headache?
  - Any cord like structure? Any BOV? Any pain while opening mouth or chewing food or combing? +/-
  - Any trauma to head?
  - Any weakness of your body? Any slurred speech?
  - Any pain anywhere else ? Hips and shoulders +
  - How is your mood ?
  - LOW, LOA, lumps and bumps
- SADMA-HO (stress)
- PMHX, PSHX
- FHX of migraine or any cancer

- From your history and the type of pain that you have you most likely have a condition called as temporal arteritis or giant cell arteritis. It is an inflammation of blood vessels in and around scalp. Cause is unknown. Symptoms are what you are having like headache, jaw pain, fatigue. If left untreated can lead to permanent vision loss.
- Admit
- Further investigation
- Steroids

Case

a 30 year old jenny comes with complaints of stiff joints in fingers for 3 Months.

- TASK
  - History taking
  - PEFE
  - Diagnosis and differentials
  - Management

Differentials

- RA
- OA
- SLE
- Dermatomyositis
- Scleroderma

History taking

- Acknowledge concern
- HOPI(stiff joints)
  - Site ? Since when?
  - Bilateral?
  - Sudden or gradual? On/off or continuous?
  - Any particular time of day?
  - Any aggravating or relieving factors?
  - 1st time?
- Associated symptoms and differentials
  - Swelling? Redness?
  - Soreness?
  - Any joint deformity?
  - Fever?
  - Tiredness?

- Any muscle aches or muscle weakness?
- Any headache? rash?
- Photosensitivity?
- Have you noticed any hair loss?
- LOW, LOA, lumps and bumps
- P5
- SADMAHO
- PMHX, PSHX
- FHX of joint problems?

PEFE

- GA
  - PRICCLED-BMI (rash +)
- Vitals
- Eyes (scleritis, iritis)
- Mouth
- CVS
- Chest- pleural effusion
- Abdomen- splenomegaly
- Neurological exam for peripheral neuropathy
- Local exam of joints:
  - Inspection- swelling, redness, deformity
  - Palpation- tenderness
  - Movements

- Office tests
- Diagnosis
  - There could be many reasons for your joint stiffness but from your history and examination you most likely have a condition called as SLE (systemic lupus erythematosus). It is an autoimmune condition. Our body has a immune system to fight against infections. But in autoimmune disease, immune system attacks our own body tissues. It is a common in young women and can involve multiple organs like joint, skin, heart, lung, kidney, nervous system.
- Further investigation to confirm diagnosis
  - FBE
  - ESR,CRP
  - UEC
  - ANA , anti-ds DNA, anti-SM antibody
- Referral to rheumatologist and symptomatic treatment

Infection cases for AMC

Case of fever

- Always have a organized approach and then you will less likely miss a diagnosis or at least reach to most likely diagnosis.
- SIQORAA my way of approaching every case
- Introduce yourself and acknowledge patient's concern of fever and I am here to help you.
- Start with open ended question
- So ask since when? What happened exactly before onset of pain any major thing patient can recall?
- Intensity: How severe the fever is did he charted the fever?
- Quality: is it associated with rigors and chills?
- How he feels affected by fever?
- **Course:** Is fever increasing in severity, decreasing or is constant
- **Duration:** For how long fever stays
- **Frequency:** Since onset does fever occurs at any particular time or throughout the day?, similar episodes in the past?

- Any thing that aggravates or relieves fever symptoms?
- Any associated symptoms: to reach differential diagnosis
- Follow a sequence to screen all the systems:
- CNS: any headache, sensitivity to light?
- ENT: pain in ear, discharge, URTI like symptoms, sore throat?
- Chest: any chest pain, cough, difficulty breathing?
- Abdomen: N,V,D, yellow discolouration of skin
- Urogenital: **Before asking ensure confidentiality and explain you need to ask questions which they might feel intimidating but necessary to reach to appropriate diagnosis.** Any c/o burning sensation while passing urine, any discharge, lumps or bumps in groin region, Any unprotected sexual intercourse? If yes are you in a stable relationship
- Skin/lymph nodes: Any rash, swelling, pain, any lumps or bumps: that is LAP can also be because of Lymphomas so if suspected ask any weight loss
- Musculoskeletal: any joint pains, muscle aches, feeling excessively tired?

Risk factors: questions to know why they are having a infection:

- Have thy come in contact with someone of similar complaint?
- What is there occupation(Risk factor as well as patient might be source of infection to others eg Health worker, chef, teachers or involving care of young ones)
- Any pets
- Travel History: Queensland (Bush walking) or outside Australia relevant if within 2-3 weeks of onset of fever exception HIV, (When, where, why, what)
- If yes motive of visit, length of stay, have they consumed raw food from street used water other than mineral water/sealed water
- Any breach to skin: Piercing, insect bite, iv drug abuse
- Sexual hx already covered
- And in the end give good closure: SADMA and r/o DM, thyroid
- Past Medical/Dental procedure

Then move into PEFE

- From Hx you localize or rule out few differentials so now we will examine patient to look for signs to help us reach a diagnosis.
- To achieve right diagnosis or list of right DD you again need to develop skill of how to ask PEFE in an organized way
- So once done with Hx tell patient thank you for the details is it ok if I talk to examiner
- Start with examiner I want to know General appearance of mr/ms/mrs
- Please be mindful General appearance is how patient appears and it doesn't means GPE

- Examiner usually will say as patient is in front of you say thank you examiner now moving on to GPE:
- Can I notice any Pallor, icterus, clubbing/cyanosis, Edema or signs of dehydration any LAP if LAP is positive examiner can you explain me the site size, appearance and feel of the LN is it tender to touch?
- Vitals:

  Growth charts/BMI

  Temperature

  PR and rhythm

  BP and any postural drop

  RR and SPo2

Now moving on to systemic examination: please be elaborative in asking the findings for the system that is involved as per the history/question

- CNS examination any positive finding?
- ENT examination any positive finding?
- CVS: apart from S1 and S2 any added heart sounds?
- Respiratory: Is there bilaterally qual chest expansion with NVS any added sounds?
- Abdomen examination: any positive findings on Insp, Palpation, Percus and Ausc
- Skin if there is rash/swelling or discharge

Finally: most likely Dx and D/D as per Hx and PEFE be logical 4-6 are enough if you are logical or divide into broad categories of causes:

- Explain Diagnosis in 4c and 4r
- **Key issues:** does the condition is notifiable or not?
- Does patient/child needs days off from school/work
- Do you need to provide prophylaxis to contacts
- Relevant investigations

- Lastly Management: Conservative and specific including investigations think logically why we are investigating and what is the motive?

Q1. 32 year old male presents to you in general practice with complain of sore throat and fever for past few days. he has been otherwise well and there is no significant past medical history.

Task

Hx

PEFE

Most likely Dx and DD

Mx

Q. 2 (My exam case dated 24 Jun 2017) You are a GP and you have seen 14 year old girl who came with her mother with sore throat and fever. you strongly suspected bacterial infection and started patint on antibiotics 4-5 days back. patient now again presents with mother with complaint of persistence of symptoms and also new onset of rash over the skin.

Task

PEFE

Explain to the patient what is the most likely diagnosis with reasons and other differential diagnosis

Sore throat Hx Follow SIQORAA

- **Site:** throat is painful evident in stem
- **Intensity:** have the soreness in throat reduced or got better?
- **Quality:** Any concerns or difficulty in swallowing food or speaking?
- **Onset, Coarse, Duration, Frequency**
- **Radiation:** none defined
- Any thing you noticed that worsens or relieves the symptom?
- I also see you have fever since when? How bad it is? Is it associated with rigors and chills? Is fever through out the day? Anything that relieves fever?
- Now start screening **associated symptom** be specific to Head, eye, ENT and chest region only.

- Have you noticed any other symptoms such as Headache, watering of eyes, irritation to light, pain in ears or difficulty hearing?
- Any flue like symptoms?
- Any difficulty opening the mouth, any lumps or bumps noticed?
- Any cough, difficulty breathing?
- How is waterworks and bowel movements.
- Any rash over skin, joint or muscle pains/swellings?

Now evaluate how he got infected?

- Have you come in contact with someone with similar complaint?
- Any recent travel?
- Are you sexually active? Do you think you can have STI or any h/o STI?
- Occupation?
- SADMA

Characteristics or positive findings in the hx:

- Sore throat, fever mild to moderate not recorded
- Associated symptoms: Noted rash over the skin which is maculopapular.
- Rash is always after consuming antibiotics so don't forget to explore antibiotics
- Have noticed LAP/painful swelling in the neck region +/- jaundice
- Have noticed generalized body aches
- He has taken antibiotics that she had from last prescription (Amoxycillin)

Positive findings in PE:

GPE: Icterus (10% cases),LAP: please ask in detail

Systemic reviews:

Throat examination: White exudate seen on b/l swollen tonsils in the mouth,

Rest of the findings only if you will ask the examiner ask for hyperaemia of soft palate +/-, No painful mouth opening, no halitosis, no strawberry tongue, no uvula deviation

Don't forget to ask ear and nose

CNS, CVS, Respi: NAD

Abdomen: Palpation Splenomegaly present or can say HSmegaly

Rash: Distribution entire body, MP rash, no bleeding or discharge

After going through detailed hx and PE:

- There are many things in my mind but most likely I am suspecting it to be a glandular fever caused by BV virus please ignore medical jargons
- Other causes which also can present similarly are CMV if patient have received blood transfusion recently or has undergone major surgery heart surgery, renal transplant that required Blood transfusion, Rubella, Adenovirus, HIV: Hx not suggestive of any risk factor or any contact history, Hepatitis: no contact history
- Bacterial infection if Streptococcus pharyngitis: have high grade fever and patient seems toxic
- Lymphomas/leukemia: no associated weight loss plus
- Drug reactions

Glandular fever: is a infectious disease transmitted after coming in close contact with someone who already have this condition.

- Quite common in 15-25 year age group.
- **Condition:** Causes symptoms like in your case that is fever, malaise, sore throat be worsening for 1 week, enlarged glands in the neck, can also cause spleen enlargement also seen in your case and even in few cases Jaundice. Symptoms might take 4-6 weeks to settle down
- **Complications:** Can lead to severe enlargement of tonsils leading to difficulty swallowing or breathing, may get complicated by secondary bacterial infection

Management:

Inv: FBE, PBF (atypical lymphocytes), IgM Ab levels.

Symptomatic: Take rest ideally 4 weeks off and advised to be indoor, drink fluid

Pain and fever: PCM

Throat gargles aspirin or glucose solution to sooth throat

NO CONTACT SPORTS risk of splenic injury

- you are a HMO in the ER of a hospital, a middle aged female presents to you with complaint of shortness of breath for last 2 days.

task

history

PEFE

investigations

mx

Hx for SOB

- As soon as you enter the room examiner is my patient hemodynamically stable?
- He might say what you want to know? Say saturation: if less than 92% and in stem it doesn't say COPD start Oxygen high flow
- Then RR, BP and PR
- Once stable ask patient how are you feeling know is it ok if I ask you some question?
- From notes I can see you are having SoB can you tell me more of that
- Site: what exactly happened two days back or just prior to onset?
- Intensity: how bad is it?
- How is it affecting your daily activity?
- Onset 2 days, Course: is it progressing? Any similar episodes in past?
- Is it through out the day or episodic?
- Anything increases or decreases breathlessness
- Associated symptoms: Headache, N and V, do you consider yourself anxious person?
- Any flu like symptoms, sore throat recently?
- Do you feel feverish? If yes is it associated with R and C, how high the fever is? Have you noted temperature?

- Any associated cough if how bad it is and whether it is associated with any sputum if yes CCVO of sputum
- Any chest pain yes so ask when? whenever she breaths in deeply she feels stabbing pain, also ask if she has racing of heart.
- SADMA
- Know ask for any h/o COPD, Asthma, Diabetes, any condition she knows related with reduced immune system?
- Any weight loss, lumps or bumps, CT/RT recently?

- **Positive findings in Hx: Fever with R&C, pleuritic chest pain, cough +/- sputum, headache, night sweats, loss of appetite**

Pneumonia risk assessment in a patient:

- Recently question came in the exam is 67 year old female with h/o Pneumonia 3 months back with h/o pacemaker for bradycardia and on CPAP because of sleep apnoea wants to go to Darwin
- Task Hx
- PEFE
- explain X ray
- Risk assessment if she can travel
- Counsel the patient

Risk factors for pneumonia:

- Age <1 year or greater than 65years
- CNS:H/o stroke, dementia, PD, impaired consciousness
- Respiratory:
  - Smokes cigarettes
  - Recent onset of URTI which progressed to LRTI
  - K/c/o COPD, asthma, bronchiectasis, bronchiolitis
- Heart/Liver and Kidney: failure
- Immunocompromised patient that is CT/RT/ Cancer/autoimmune disease/Steroids
- Haven't received immunization
- Living in institutional car such as nursing home
- Recent major Surgery or trauma

PEFE:

- General appearance: patient seems lethargic
- GPE: PICCLED r/o cyanosis
- Vitals: Temp: 39, pr 98/MIN, BP 106/62, RR 30, SPO2 93%, BMI 22
- Systemic review: Cns, cvs nad
- Respiratory system:
  - **Inspection:** is chest wall movement symmetrical examiner might say diminished in rt base, any scar, sinus, redness rash, any assessor muscles in use or effort breathing
  - **Palpation:** trachea central or not, Tactile vocal resonance increased
  - **Percussion:** dullness in rt lower chest region
  - **Auscultation:** Bronchial breathing with crepts in rt side present with or without pleural rub
- Abdomen: NAD
- Office test: remember you are in hospital so so investigations:
- Blood: FBE, ESR/CRP, KFT/LFT, BSL, S. electrolytes, ABG, blood c/s
- Urine r/e and urine test for legionella/PCR
- Imaging: CXR right lower lobe consolidation seen

Where patient should be treated:

CURB 65: indicator of mortality

Assess severity

- **C**onfusion
- **U**remia >7mmol or >19 mg
- **R**R > 30/min
- **B**P < 90 systolic
- **65** years or older

Score

0-1: OPD

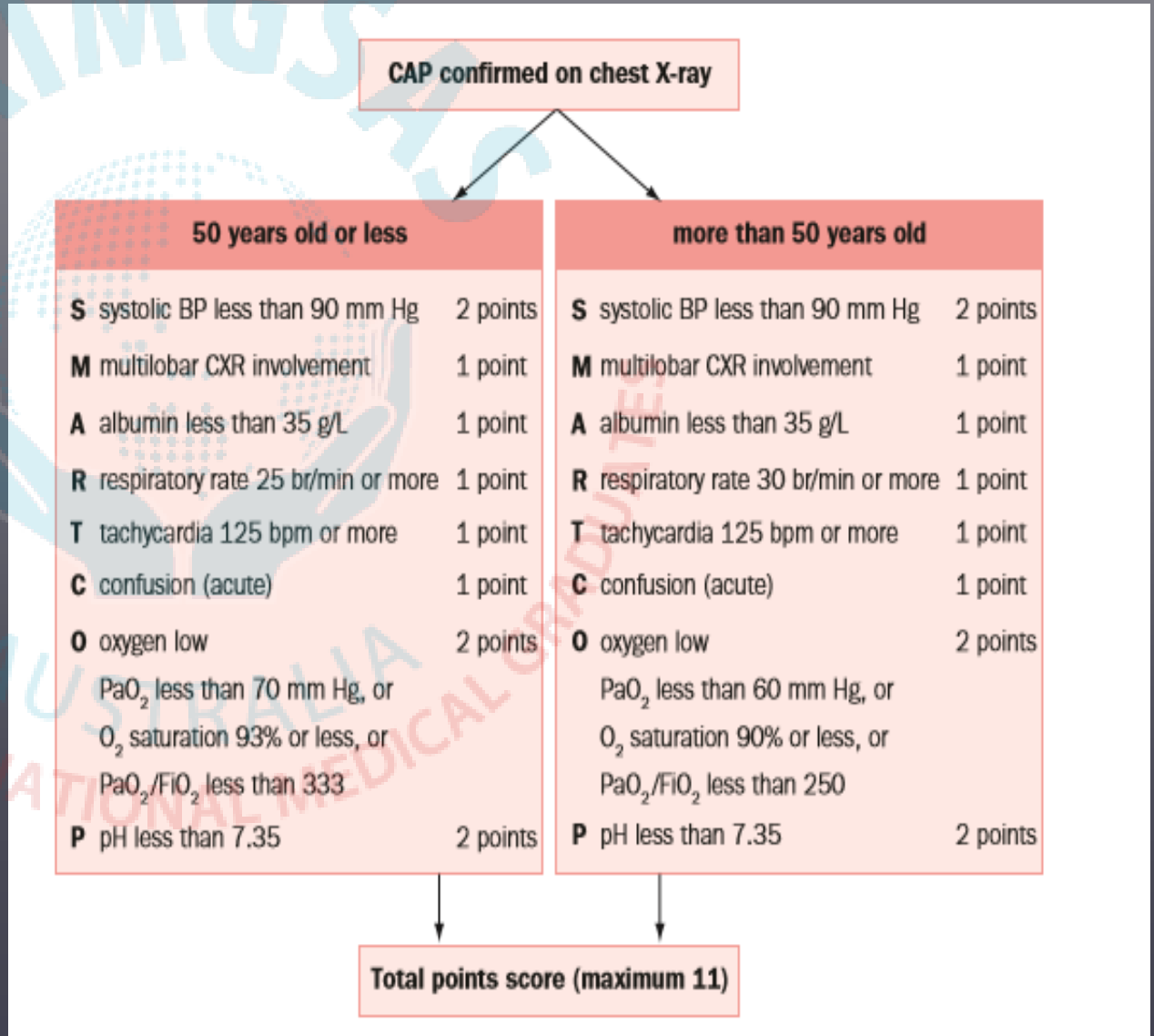
2 :treat with short hospital stay

3-5: Hospitalize and evaluate in need

ICU admission

SMART COP: also assesses severity

ScorE >5 needs Hospitalization



Acute onset Sob

Respiratory	Cardiac	Psychiatric
Acute asthma exacerbation COPD exacerbation Pneumonia Pneumothorax Pl effusion Pulmonary embolism	ACS Ac LVF Arrhythmias	GAD

- After going through detailed hx in your case most likely you have Pneumonia that is infection in your lower respiratory tract causing the symptoms
- Not uncommon
- Causes: fever, anorexia, malaise, cough, chest pain, sob
- If untreated can cause extensive lung involvement or can spread to other parts of body by blood that is sepsis

Regarding management:

- Say mrs browns I will call my senior who will also look in your case and after his consultation we will start you on antibiotics plus he might plan for any further major investigations such as pleural tap if he suspects fluid, bronchoscopy to get sample or look inside your lungs
- Treatment will consist of
- ‘Symptomatic treatment: that is anti inflammatory for pain and fever
- Keep yourself hydrated to loosen phlegm, take rest till your symptoms settle down
- Oxygen as required
- Specific Antibiotics:
- Mild: amoxiclav + Roxithromycin
- Mod to severe: if unable to tolerate orally IV antibiotics penicillin/ceftriaxone + atypical cover: Azithro/erythro/roxithro
- Once you recover you will be followed regularly by your GP

Another recent question in exam on pneumonia:

you are HMO in a rural hospital with tertiary hospital 400km away from you, you are seeing a Greek old man who can speak English adequate enough to explain his symptoms suggestive of pneumonia, he is now agitated and is screaming in ward in hospital.

Task:

Explain to the kin his condition and what investigations you will do

Key issue whether assessed patient privacy first

- Whether communicating effectively: includes empathy and clarity of information delivered
- Have you discussed the relevant differentials and investigations required
- For any confused/delirious Patient remember pneumonic **Dementia**
- Even though Hypoxia is the most common cause also likely in this case but also need to rule out other relevant causes plus have to assess if patient needs to be transported to tertiary care if patient have severe pneumonia requiring invasive methods such as vasopressor to maintain BP and O2 sats low ? Intubation.
- So remember Smart cop or curb65 and look what information you have been given.

I can understand how difficult situation is for you but most likely from history and examination it seems to be he is having pneumonia/lowr respiratory tract infection because of which he is not getting enough oxygen to brain leading to confusion.

- However we need to also rule out other causes which can also lead to confusion such as
- Drugs: abuse/overdose, depression, dementia(don't present acute onset)
- Eye/ear loss of vision or hearing loss might also mimic
- Metabolic: electrolytes imbalance
- Endocrinal causes: such as DM, thyroid problem
- Neurological causes: stroke, pd
- Tumour/trauma
- Infections:
- Accidents: cardiac and cerebral

Inv

- Blood: ABG, FBE, ESR/CRP, KFT, LFT, S. electrolytes, TFT, BSL, Cardiac markers, drug screening, blood c/s
- Urine: urine r/e, urine c/s urine for drug screening
- Imaging's: ECG, CXR primarily and with specialist opinion will go for NCCT brain, echocardiography
- If vitals unstable or anything suggestive of severe pneumonia say patient will require transportation to tertiary hospital and I arrange for same or if not getting any idea say I will also discuss with specialist and if required we might have to shift patient to tertiary hospital for further management

You are a general practitioner and a 40 year old man complains of generalized aches and pains all over the body and have been feeling unwell and tired

task

hx, pefe, pd and dd, inv and mx

Hx

- From notes I can understand you are having aches and pains can you tell me more about that?
- How bad it is?
- How you feel it is affecting your life
- Onset: 6 week,s course feeling same and haven't improved, duration throughout the day, frequency for first time
- You said it started 6 weeks back what happened then? Had sore throat and since then I am having this feeling sore throat settled but still having cough not associated with sputum Anything els you have noticed? Any fever? Yes I feel bit hot usually in the evening
- Anything makes your symptoms better or worse nope
- Associated symptoms tired or have locoregional approach
- SADMA: smoker 10 ciggi/day for 10 years
- travel hx went to Malaysia 2 weeks back for 10 days. Guided tour around Malaysia and no outside food, no mosquito bite went with wife no STI or recreational drugs

- Occupational hx : insignificant

PEFE:

Positive findings:

Patient appears lethargic

Vitals: mildy high temp, RR 20/min, spo2 94%,

GPE, CNS and CVS: NAD

Respi: b/l equal chest expansion, diffuse basal crackles +/- wheeze present but no dullness in percussion in rt side

Rest of systemic review nad

Office test nad.

Explanation for dx and dd

- After going through the hx and Pe there are few things in my mind but most likely you are having **atypical pneumonia other less likely causes are tuberculosis, Lung tumour, Connective tissue disease, pleural effusion**
- Atypical pneumonia are caused by bacteria such as chlamydia, legionella or mycoplasma and or viral causes

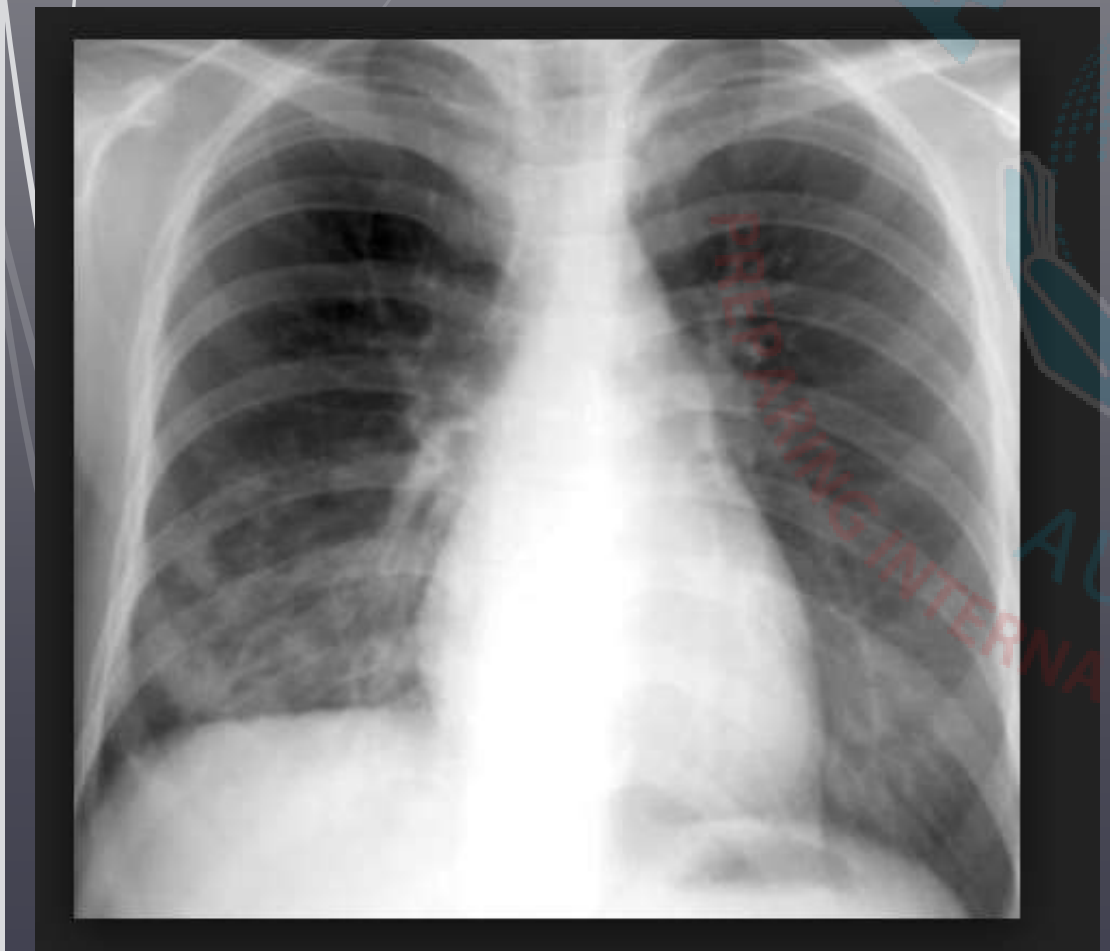
Inv: Fbe, crp, kft, lft, BSL, Sputum for microscopy, pcr for atypical and viral serology and c/s

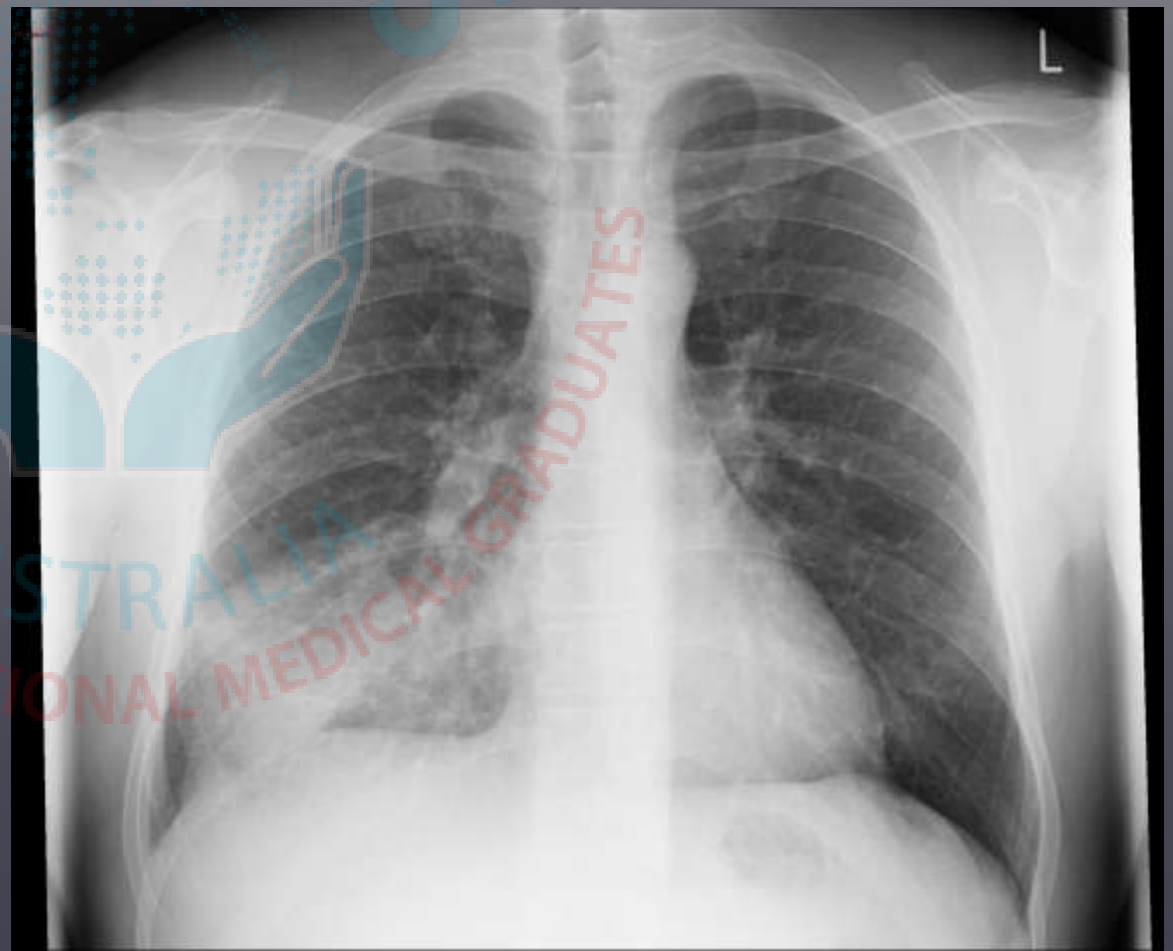
Urine r/e and pcr for atypical organism

Imaging: CXR: suggestive of diffuse infiltrative changes on rt side

BAL only if patient is immunocompromised

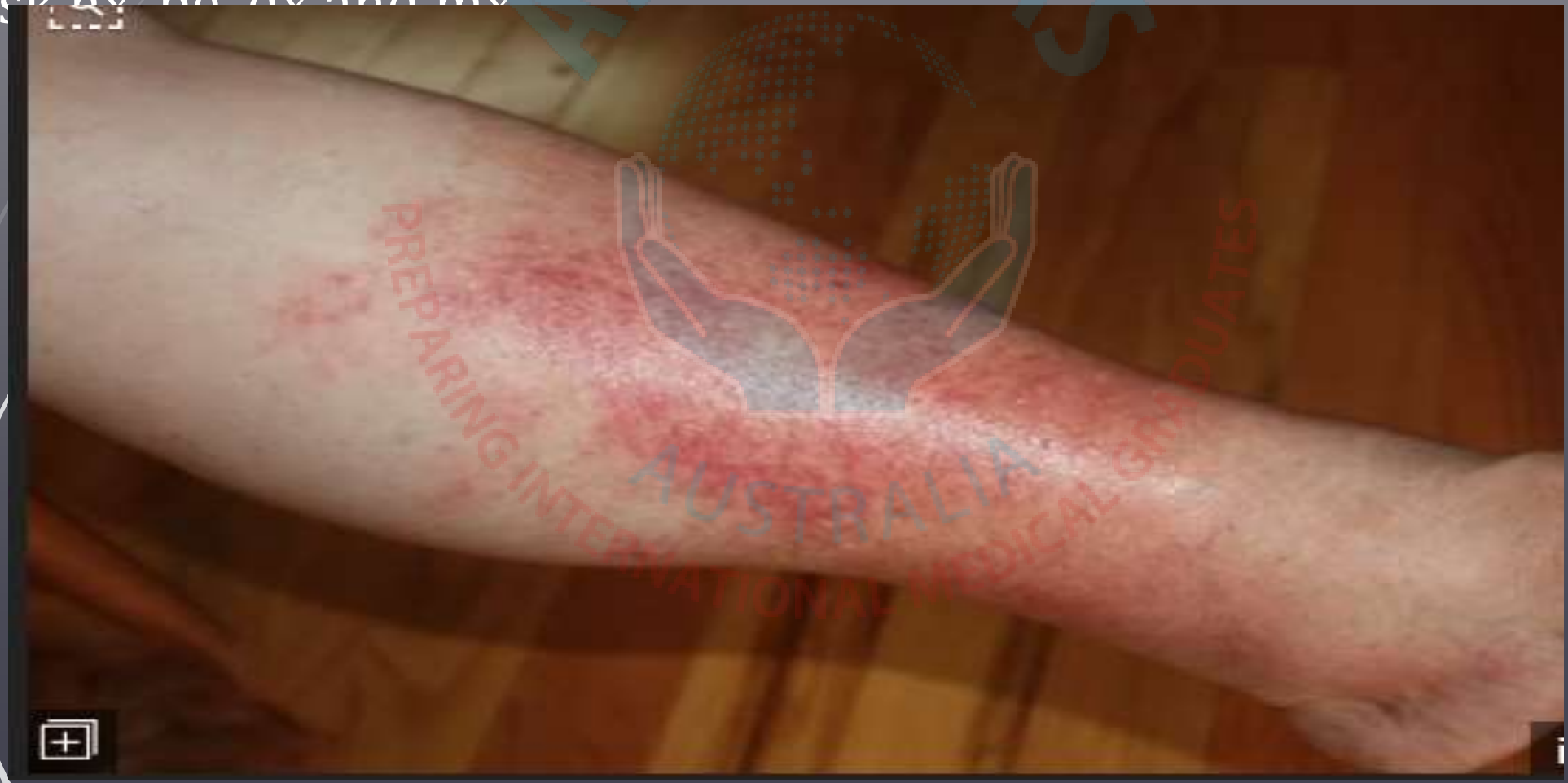
Atypical vs typical pneumonia CXR





65 year old male presents in emergency room where you are working as hmo with complaint of pain and swelling in his right leg.

task hx, pe, dx and mx



- Hx same as before SIQORAA
- First is open ended question so can you tell me exactly what happened
- Site: on which leg
- Intensity how bad it is on scale of 1-10 patient will say 6-7: its quite painful do you need any pain relief oh I had Panadol its ok at the moment
- Quality of pain: throbbing in nature
- Onset 2 days back what exactly were you doing when it started nothing just woke up in the morning with pain in leg thought nothing much initially
- Course increasing over time
- Duration throughout the day
- Frequency similar episodes in past: no
- Radiation nope
- Aggravating or relieving factor increases with activity
- Associated symptoms: n/v, headache, fever: yes and associated with rigors and chills

- Ask about cough, chest pain, bowel and bladder movements
- Lumps or bumps anywhere in body oh yes I feel few lumps in groin region
- D/D questions: did you think you had any trauma at that area/bite by insect:
- Yes 3 days back while working in garden I was kneeling and had mild scratch at that time
- Did you travelled recently, any clotting problem?, major surgery?
- r/o immune deficiency: any weight loss that is tumour, diabetes, CT/RT

SADMA for good closure

General app

- GPE: LAP positive
- Vitals: temperature 38.5 pr 92/min, BP might be bit lower side
- Systemic examination: all nad
- Moving on to examination of leg
- Inspection: as you see in picture
- Palpation: warm, tender to touch, CRT normal, pulses palpable, ask for crepitus: indicator of necrotizing fasciitis, is it very severely tender also seen in necrotizing fasciitis, sensations, ask Berger's test
- Ask similar swelling or rash anywhere else

- **temperature, tenderness, CRT and pulses**

Hello john after going through complete hx and pe

- Most likely I suspect due to mild injury while working in garden the scratch got infected and spread in the skin area of leg and we call it cellulitis.
- Other less likely causes are DVT that is clot in a vein it usually occurs if you had major surgery recently, not mobilizing much, family hx, nasty growth and I haven't seen any thing pointing to that
- Burn injury that might have got infected
- Pyoderma gangrenosum which is basically associated with some underlying medical hx nad in your case
- Necrotizing fasciitis can be have to be watchful

- Cellulitis is a serious condition as if untreated it can lead to death of skin area and can also spread to rest of the body causing sepsis
- Not uncommon treatment

Management:

- we will admit you now and will send investigations
- FBE, inflammatory markers, blood c/s, BSL, KFT, LFT
- Urine r/e and wound scraping c/s
- Imaging will discuss with my registrar regarding your case and also plan to do USG of leg to see if there is clot in vein
- Symptomatic treatment: anti inflammatory and limb elevation
- And specific treatment we will start you on antibiotics now (flucloxacillin) once c/s reports are back we might continue or plan to change antibiotics
- Immunization: Tetanus

Q. George aged 65 years presents with wife with c/o swelling in right leg and swelling for few days. his wife noticed that swelling have increased severely and George is having fever. he is known diabetic and have refused breakfast in morning.
task everything

- c/o necrotizing fasciitis
- d/d same as previous case:

Cellulitis

Necrotizing fasciitis

Infected burn injury

Pyoderma gangrenosum

dvt

- Here patient will be very sick ? Shock
- Don’t forget to ask dehydration
- Can lead to gangrene of surrounding tissue and organ
- Causative bug: clostridium
- Inv: MRI/CT scan along with previous INV
- Mx: hospitalize
- surgical debridement
- Antibiotics

Q. You are a gp and 55 year old female presents with complaint of flu like symptoms.

task

hx, pefe, dx and dd

inv

mx

- Hx have locoregional approach SIQORAA f/b looking for source of fever/infection: fever with rigors and chills
- N and v
- Urine is painful then need to evaluate further about this: CCVO
- Any cloudy/frothy urine/foul smelling, do you think you passing blood with urine
- Any hx of kidney/ureter stones
- Any hx of kidney/urinary tract disease in past/STI?
- GPE: pallor, dehydration: yes, oedema , icterus
- Vitals: high grade fever
- Systemic review: Abdomen: inspection nad,
  - palpation also ask for any suprapubic tenderness
  - percussion : right side renal angle tenderness
  - Auscultation and in end PV/DRE

D/D:

- Acute pyelonephritis
- Acute cystitis
- Acute abdomen: that is acute appendicitis, acute cholecystitis
- tubovarian disease

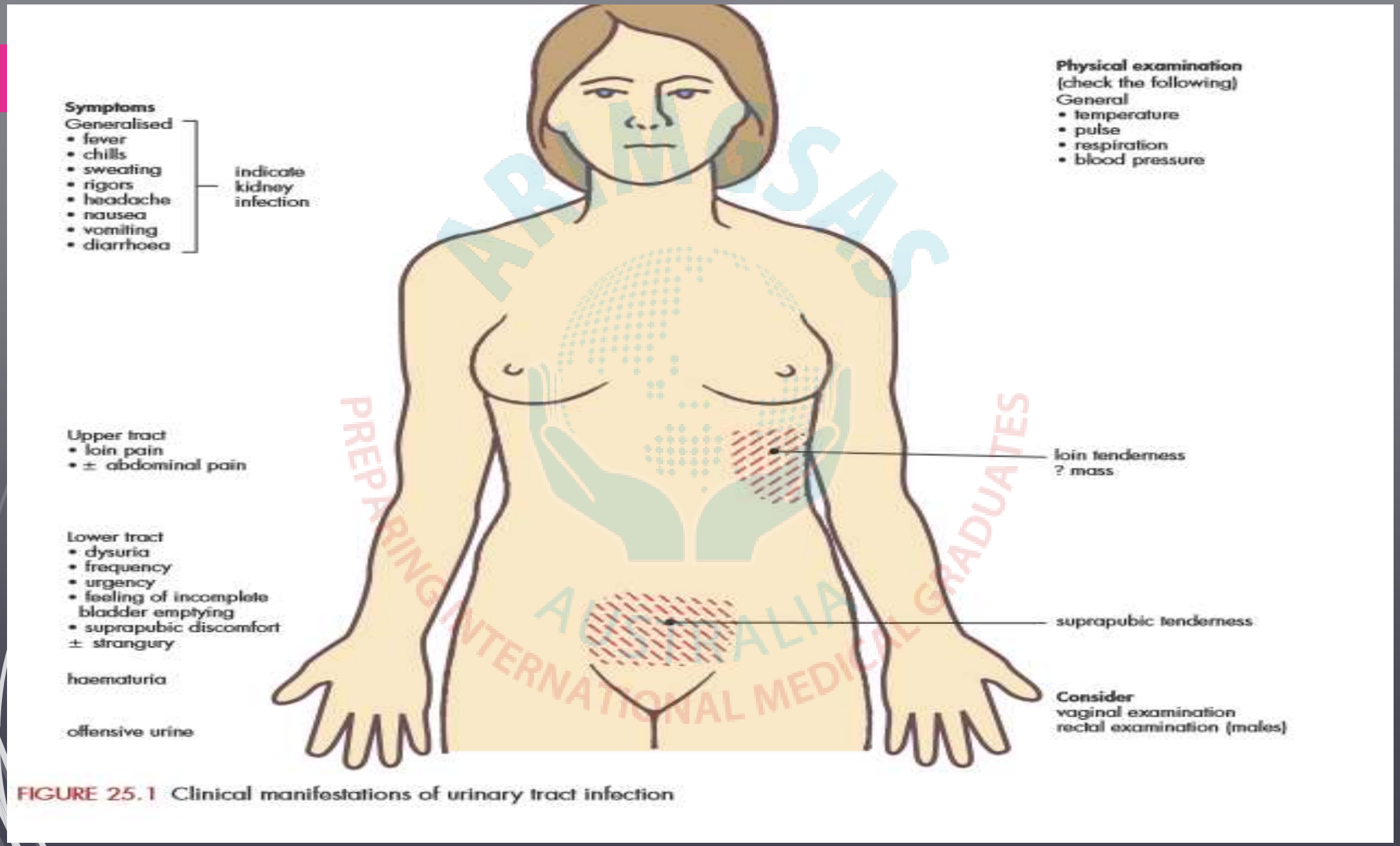


FIGURE 25.1 Clinical manifestations of urinary tract infection

- Always be sympathetic and ask do patient have enough support at home
- Explain: condition infection in kidneys and we call it acute pyelonephritis
- Cause: infection most likely by E coli but will know exactly by c/s report of urine
- Commonality
- Complication: if not aggressively treated can lead to damage to kidney structure effecting its function and risk of spread
- c/f as you are having

Management

- Admission
- Inv: blood: FBE, CRP, KFT, LFT, BSL, blood c/s
- Urine: r/e and c/s
- Imaging: USG KUB
- Symptomatic: anti inflammatory, iv fluids for dehydration
- Specific: iv antibiotics and once c/s reports are back we will adjust or might change antibiotics accordingly. Gentamycin + Ampicillin
- After 48 hours of antibiotic course we will repeat c/s investigation to see if infection has settled or not.
- if not we will also do CT scan to know the cause
- Once your symptoms settle down we will change you to oral antibiotics and you will be followed by your GP

32 year old female comes to you with complaint of 3 weeks h/o intermittent fever. she has also been experiencing lethargy and anorexia.

Task

Hx, PEFE, Dx and DD, Mx

History:

- Positive findings to get:
  - Night sweats
  - **Have noticed some lumps in neck: she will say negative**
  - Weight loss 2-3 kilo over last 1-2 months
  - Itching over the skin
  - **Pel-Ebstein fever** implies a cyclical fever with long periods (15-28 days) of normal or low temperature: it is, at best, rare and some have called it mythical.
  - Neck swelling may increase with alcohol can also increase or decrease in size with time and more commonly are matted
  - Have locoregional approach and try to rule out all systems pathology, travel infections, HIV and STI risk

PEFE:

- GA
- GPE: PICCLED if LAP missed case missed. Always say examiner can you Explain the LN.

Remember **She Cuts The Fish PERfectly**

S Site, size, size, shape

C Colour, consistency, contour

T Temperature, tenderness and trans illumination

F Fixed or mobile

P Pulsatile

E Expansible or not

R reducible or not

Continue:

- Vitals stable
- **CVS/Respi** any positive finding
- **Abdominal examination:** splenomegaly present
- Rest of examination no specific findings

Dx and DD:

Hodgkin's/NHL

Leukemia

TORCH, Ross river fever

URTI, HIV, Sinusitis, EBV

Management:

- After going through hx and PE I am concerned regarding the node I felt in the neck I am suspecting something nasty.
- We have defence glands called lymph nodes which are filtration channels and localize and contain infection or nasty cells but for unknown reason I think they have nasty transformation in itself and we call it lymphoma.
- I will immediately refer to specialist who will most likely perform biopsy to make the right diagnosis.
- Blood investigation: FBC, film, ESR, LFT, LDH, urate, Ca^{2+}. Increased ‘ESR or “Hb indicate a worse prognosis. LDH is raised as it is released during cell turnover
- Depending upon, size, type of growth and spread further treatment will be decided whether surgical excision associated CT/RT required. To rule out spread we might also consider do special scan called PET scan.

Tertiary hospital clinic you are a GP and 30 year old fashion consultant presents with c/o fever and rash for 2 days.

Task Further Hx PEFE and explain possible nature of his condition

Hx

- Patient have h/o unprotected sexual behaviour
  h/o tattooing and piercing
- He had recurrent episodes of sore throat, diarrhea and skin infections

PEFE:

- Generalized tender LAP, MP rash over the body
- Temperature 38.5
- Inflamed palate in ENT examination

Investigations

- FBE, LFT, KFT, STI screening and HIV serology with consent of patient, TORCH profile, EBV serology,
- If ELISA negative repeat after 3 months and if positive do Western blot for confirmation

q. 32 year old Mathew is feeling tired and generalized aches and pain. he recently travelled to Queensland.
task hx, pfe, dx and dd mx

PUO


ARIMGSAS
PREPARING INTERNATIONAL MEDICAL GRADUATES
AUSTRALIA

View/Print Table

TABLE 1

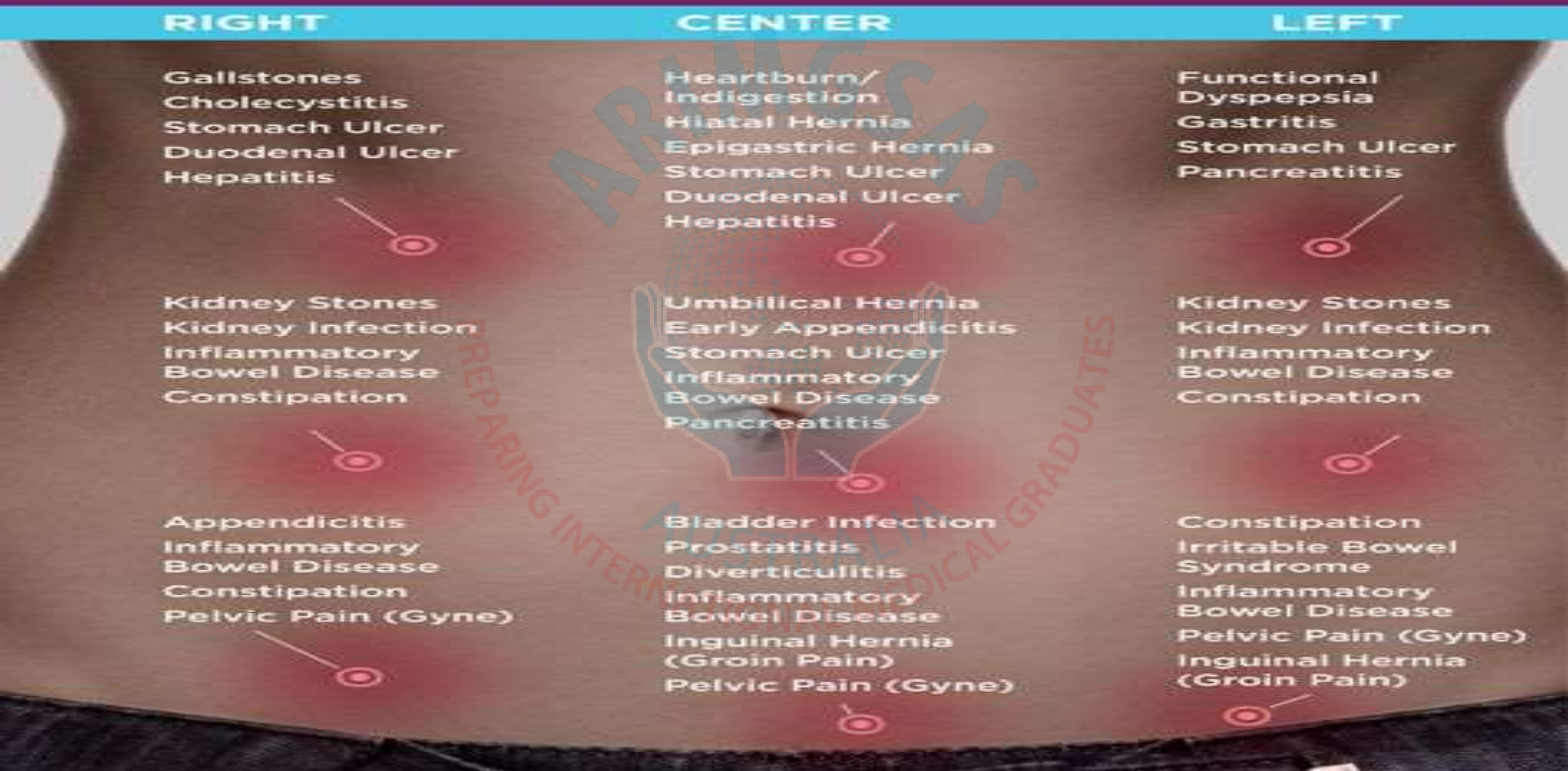
Classification of Fever of Unknown Origin (FUO)

CATEGORY OF FUO	*DEFINITION*	*COMMON ETIOLOGIES*
Classic	Temperature >38.3°C (100.9°F) Duration of >3 weeks Evaluation of at least 3 outpatient visits or 3 days in hospital	Infection, malignancy, collagen vascular disease
Nosocomial	Temperature >38.3°C Patient hospitalized ≥24 hours but no fever or incubating on admission Evaluation of at least 3 days	*Clostridium difficile* enterocolitis, drug-induced, pulmonary embolism, septic thrombophlebitis, sinusitis
Immune deficient (neutropenic)	Temperature >38.3°C Neutrophil count ≤ 500 per mm^3 Evaluation of at least 3 days	Opportunistic bacterial infections, aspergillosis, candidiasis, herpes virus

Pain Abdomen

CONDITIONS ASSOCIATED WITH

ABDOMINAL PAIN



ACUTE ABDOMEN

- -ITIS
  - Cholecystitis
  - Cholangitis
  - Appendicitis
  - Diverticulitis
  - Pancreatitis
- ISCHAEMIA
  - Mesenteric ischemia
- PERFORATION
  - Peptic ulcer
  - Ectopic pregnancy
  - Ovarian cyst rupture
- OBSTRUCTION
  - Small bowel
  - Large bowel

CASE:
you are in ED and your next patient is a 48-year-old female c/o abdominal pain (RUQ).

- **Tasks**
- History
- PEFE
- Diagnosis and Differential
- Investigations

Differential diagnosis

- Cholecystitis
- Cholangitis
- Hepatitis
- Hepatic Ca
- Pancreatitis
- Pancreatic Cancer
- PUD
- Pyelonephritis, ureteric colic
- LL pneumonia
- MI

History

- Acknowledge concern
- Haemodynamic stability
- Pain questions(SIQORA-1)
  - Site- RUQ
  - Intensity- offer painkiller after ruling out allergies
  - Quality – steady pain
  - Onset – started last night after having oily meals
  - Radiation – right scapula
  - Aggravating factor– deep inspiration
  - 1st time-- no

- **Associated GI Symptoms**
  - Nausea/ vomiting, chills and rigors
  - Constipation, bloody diarrhoea
  - Distention
- **Associated Systemic Symptoms**
  - Fever
  - Itchiness
  - Skin Discolouration
- **Associated Constitutional Symptoms**
  - Loss of weight / Appetite
  - Any lumps and bumps in the body

- DD questions
  - Any heavy or fatty meal before the pain started?
  - Any discoloration of your skin?
  - Any recent travel? Any tattooing?
  - Partner, stable relation, any unprotected sex?
  - Any itchiness?
  - Any chills and rigors?
  - Any trauma to tummy?
  - Any chest pain or funny racing of heart?
  - Any cough or SOB?
  - Any change in colour of pee or poo?
  - Did you open your bowels today?

- R/O risk factors (5 F's)
  - Fat / Fatty food
  - Fertile
  - Forty
  - Female
  - Fair
- SADMA-HO
  - Alcohol
  - NSAID'S
  - Any illicit drugs by any chance?
- PMHX of gall bladder stone or PUD AND Family history

PEFE

- **General Appearance**
  - Dehydration, Pallor, Icterus, LAD, BMI
  - Distressed due to pain.
- **Vitals-**Temperature, BP
- **CVS, Resp**
- **Abdominal examination,**
  - Inspection (distension, mass)
  - Palpation (Tenderness, Rebound tenderness , Murphy's sign +, Rovsing's and reverse Rovsing's, guarding +/-, rigidity, McBurney sign)
  - auscultation for bowel sound
- **DRE**
- **Office tests**

Diagnosis and differentials

- There could be many reasons for your abdominal pain but From your history and examination most likely you have a condition called as cholecystitis, inflammation of a gallbladder .Gallbladder is an organ that stores bile which is secreted from liver and needed for digestion . I was even thinking about cholangitis, but you do not have fever, chills….,Hepatitis but no yellowish discolouration of skin------all other DD's. I would like to run some investigations to confirm my diagnosis
  - USG(pericholecystic fluid, >4mm gallbladder wall thickening)
  - Full blood examination
  - LFT
  - Lipids
  - Serum Lipase / Amylase
  - X-ray

Treatment

- **<u>INITIALLY</u>** (applies to all acute abdomen cases)
  - **Bed rest**
  - **IV fluids**
  - **NPO**
  - **Analgesia**
  - **Antibiotics**

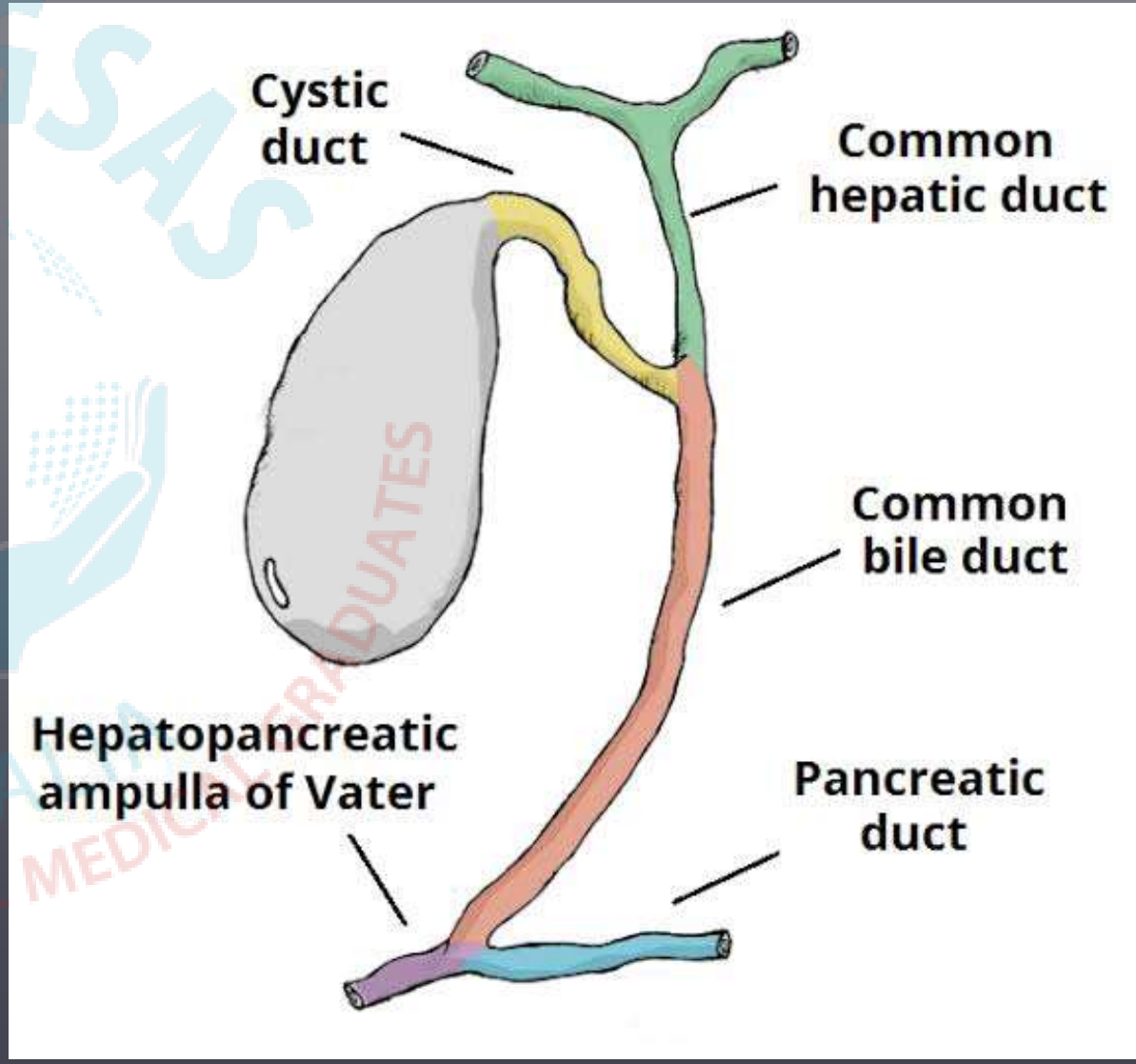
➡ when inflammation is settled ➔ Cholecystectomy

Case :
54-year-old male come to ED c/o RUQ Pain and fever.

- **Tasks**
- History
- PEFE
- Diagnosis and Differential
- management

Differential diagnosis

- Cholecystitis
- Cholangitis
- Hepatitis
- Hepatic Ca
- Pancreatitis
- Pancreatic Cancer
- PUD, Duodenal Ulcer
- Pyelonephritis ,renal and ureteric colic
- LL pneumonia
- MI



History

- Acknowledge concern
- Haemodynamic stability
- Pain questions(SIQORA-1)
  - Site- RUQ
  - Intensity- offer painkiller after ruling out allergies
  - Quality – steady pain
  - Onset
  - Radiation
  - Aggravating factor
  - 1st time-- no

- **Associated GI Symptoms**
  - Nausea/ vomiting +/-, chills and rigors
  - Constipation, bloody diarrhoea
  - Distention
- **Associated Systemic Symptoms**
  - Fever (39)
  - Itchiness +
  - Skin Discolouration
- **Associated Constitutional Symptoms**
  - Loss of weight / Appetite
  - Any lumps and bumps in the body

- DD questions
  - Any heavy or fatty meal before the pain started?
  - Any discoloration of your skin?
  - Any recent travel? Any tattooing?
  - Partner, stable relation, any unprotected sex?
  - Any itchiness? +
  - Any chills and rigors? +/-
  - Any trauma to tummy?
  - Any chest pain or funny racing of heart?
  - Any cough or SOB?
  - Any change in colour of pee or poo? (pale stool, dark urine)
  - Did you open your bowels today?

- SADMA-HO
  - Alcohol
  - NSAID'S
  - Any illicit drugs by any chance?
- PMHX of gall bladder stone or PUD
- Family history

PEFE

- **General Appearance**
  - Dehydration, Pallor, Icterus + , LAD, BMI
  - Distressed due to pain.
- **Vitals**
  - Temperature 39 F, BP, tachycardia
- **CVS, Resp**
- **Abdominal examination,**
  - Inspection (distension, mass)
  - Palpation (Tenderness, Rebound tenderness , Murphy's sign +, Rovsing's and reverse Rovsing's, guarding, rigidity, McBurney sign)
  - auscultation for bowel sound
- **DRE**
- **Office tests**

Diagnosis and differentials

- There could be many reasons for your RUQ pain but from your history and examination most likely you have a condition called as cholangitis.
- Differentials

Case:

You are an HMO in the ED and a 65-year-old female comes to you complaining of pain in the RUQ and fever for the last few weeks. The patient had cholecystectomy 3 years ago

- **Tasks**
  - History
  - PEFE
  - Diagnosis and DDX
  - Management

Differential diagnosis

- Hepatitis
- Cholangiocarcinoma
- Pancreatitis
- Pancreatic cancer
- Post-cholecystectomy syndrome
  - Cystic Duct Syndrome
  - Retained calculi causing cholangitis
  - Stricture
  - Choledocholithiasis
  - Biliary dyskinesia

- Acknowledge concern
- Haemodynamic stability
- Pain questions(SIQORA-1)
  - Site- RUQ
  - Intensity: around 5,offer painkiller after ruling out allergies
  - Quality – colicky
  - Onset- constant
  - Radiation
  - Aggravating factor
  - 1st time-- no

- **Associated Symptoms**
  - Nausea/ vomiting, chills and rigors
  - Constipation, bloody diarrhoea
  - Distention
  - Fever
  - Itchiness
  - Skin Discolouration
  - Loss of weight / Appetite, any lumps and bumps in the body
- DDX questions
- SADMA-HO
- Fhx and past MHx

PEFE

- **General Appearance**
  - Dehydration, Pallor, Icterus + , LAD, BMI
  - Distressed due to pain.
- **Vitals**
  - Temperature, BP, tachycardia
- **CVS, Resp**
- **Abdominal examination,**
  - Inspection (distension, mass)
  - Palpation (Tenderness + , Rebound tenderness , Murphy's sign ,Rovsing's and reverse Rovsing's, guarding, rigidity, McBurney sign)
  - auscultation for bowel sound
- **DRE**
- **Office tests** (urobilinogen +)

Diagnosis and differentials

- There could be many causes for your RUQ pain and yellow discolouration of skin but from your history and examination, you mostly have a condition called as cholangitis due to post cholecystectomy syndrome. It is an inflammation of the bile ducts and the reason for this could be any blockage either by a stricture or a stone in the CBD.
- Draw and explain…….

Case:
you are in ED and about to see a 40-year-old male c/o abdominal pain worsened over 3 hours.

- **Tasks**
  - Hx
  - Explain possible causes
  - Investigation and initial management

Differential diagnosis

- Cholecystitis
- Cholangitis
- Hepatitis
- Hepatic Ca
- Pancreatitis
- Pancreatic Cancer
- PUD, Duodenal Ulcer
- Pyelonephritis, renal and ureteric colic
- LL pneumonia
- MI

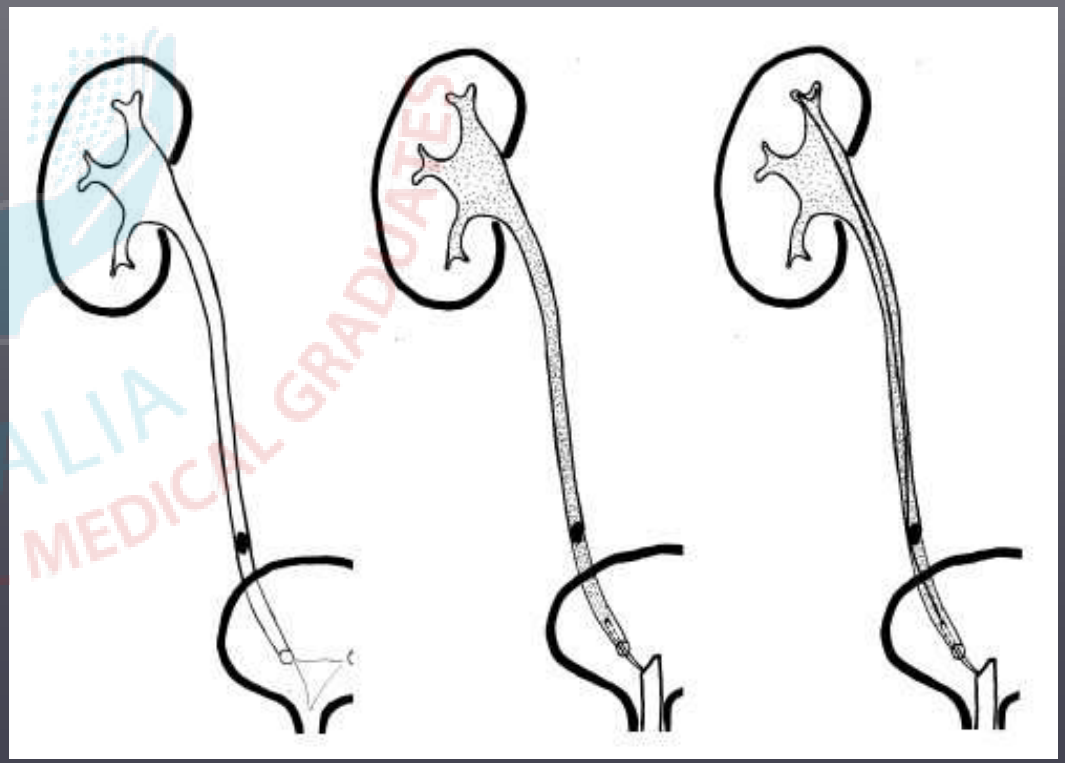
History

- Acknowledge concern
- Haemodynamic stability
- Pain questions(SIQORA-1) started in rt flank , now in groin.
- Associated symptoms-- +/- vomiting
- Ddx questions
  - Any heavy or fatty meal before the pain started?
  - Any discoloration of your skin? Any itchiness?
  - Any chills and rigors? Fever?
  - Any trauma to tummy?
  - Any chest pain or funny racing of heart? Any cough or SOB?
  - Any change in waterworks? Colour of pee(+/- blood) and poo?
  - Did you open your bowels today?

- SADMA
- PMHX and family history

Diagnosis

- From your history and the type of pain you have you most likely have a condition called as ureteric colic.it is a pain caused by passage of stone from kidney down through ureters



Investigations

- FBE
- UEC, Urine MCS
- Blood level of Calcium, Magnesium, phosphates and Uric acid
- KUB X-ray
- KUB USG
- KUB CT-Scan (picture provided)

Management

- Your CT findings are consistent with the uretic stone
- Admit
- Good pain relief
- will be seen by the specialist and further management will be decided depending on site and size of stone.
  - <5mm can pass spontaneously(more fluid intake, pass urine in a container and when you pass any stone, give it to the lab)
  - >5mm

1. Basket removal
2. Shock wave lithotripsy
3. Percutaneous Nephrolithotripsy (PCNL)
4. Chemo lysis

Case:
you are in your GP clinic and about to see a 38-year-old male with c/o dark urine

- Tasks
  - History
  - PEFE
  - Diagnosis and differentials

Differential diagnosis

- Hepatitis
  - Viral
  - Drug induced
  - Autoimmune
  - Alcohol induced
- CLD
- Choledocholithiasis
- Cholangiocarcinoma
- Ca pancreas
- Rhabdomyolysis

History

- HOPI---dark urine
  - What do you mean by dark urine?
  - What colour is your urine?
  - Since when? Since morning
  - Any increased frequency in water works?
  - Any burning or painful urination?
- Associated symptoms
  - n/v, fever(had fever few days back when I had a sore throat but now, I am alright after taking medication)
  - What medication did you take? Augmentin.
  - Any skin colour change? Any change in poo colour?
  - Any itching? +

- **Ddx questions:**
  - Any recent travel? Tattooing? Iv drug use? Needle sharing? Blood transfusion? Sexual history?
  - Any drug recently? Augmentin
  - Any past history of liver disease?
  - Any history of gall stones?
  - LOW, LOA, lumps and bumps?
  - Any excessive exercise?
- SADMA-HO
- PMHX and FHX

PEFE:

- General appearance (PICCLED-BMI) Jaundice
  - IV drug marks, Fetor hepaticus, Scratch marks, Spider nevi
  - Parotid enlargement, Gynaecomastia
- Vitals
- ENT
- CVS/RESP
- ABDOMEN
  - Inspection– Distention, Mass
  - Palpation– Tenderness, Organomegaly (hepatomegaly)
  - Auscultation
- Inguinoscrotal-- hypogonadism (hemochromatosis)
- Office test
  - Urine dipstick- bilirubin +

Diagnosis and differentials

- From your history and examination you most likely have a condition called as drug induced cholestatic hepatitis. It is an inflammation of liver and the cause in your case is the medication that you took for your sore throat. I was thinking about other conditions that could have caused these symptoms like viral, alcoholic hepatitis, pancreatic ca , cholangiocarcinoma --------- but all of this is less likely in you.
- To confirm my diagnosis and rule out other causes , I would like to run certain investigations:
  1. FBE
  2. LFT/Hep serology
  3. USG abdomen

Case:

1.you are in ED, your next patient is a 25-year-old male c/o pain abdomen. Vitals are BP=100/70, HR=82 RR=22, O2=94%

- **Tasks:**
  - History
  - Diagnosis and differentials
  - Investigations

2.middle aged female with abdominal pain. Investigations has been done.

WBC= 10,000
Lipase= 1200
LFT→ AST, ALT, GGT all elevated
UEC normal
ECG normal

- **Tasks:**
  - History
  - Explain Diagnosis and differentials
  - Management

Differential diagnosis of upper abdominal pain

- GORD
- Peptic Ulcer
- Pancreatitis
- Ca Pancreas
- Hepatitis
- Cholecystitis
- Cholangitis
- LL Pneumonia/MI
- Bowel Obstruction

History

- Haemodynamic stability
- Vitals same as before
- Pain questions(SIQORA-1)
  - Site- epigastrium
  - Intensity- 6/7 (offer painkillers)
  - Quality- Dull and Steady
  - Onset- Sudden , few hours back
  - Radiation – to back
  - Aggravated by lying down and relieved by leaning forward

- **Associated Symptoms**
  - Nausea/ vomiting + (CCVO)
  - Fever, chills or rigors
  - Constipation,
  - Skin Discolouration
- **Ddx questions:**
  - Any heartburn? Any acidic sensation in mouth?
  - Any history of painkiller use? Any dark stools?
  - Any Binge drinking? +
  - LOW, LOA, Lumps and Bumps?
  - Pain related to fatty foods?
  - Any yellow discolouration of skin? Any itchiness?
  - Chest pain, racing of heart, SOB, sweating?
  - Waterworks? When was the last time you opened your bowels?

- SADMA→ ALCOHOL +, no NSAID'S
- PMHX of gall stones
- FHX

Acute Pancreatitis Causes

G: gallstones

E: ethanol (alcohol)

T: trauma

S: steroids

M: mumps / malignancy

A: autoimmune

S: scorpion stings/spider bites

H: hyperlipidaemia/hypercalcaemia

E: ERCP

D: drugs

Diagnosis and differentials

- There could me many reasons for your upper abdominal pain but from your history you most likely have a condition called as Pancreatitis, inflammation of pancreas. It is a small organ located behind the stomach and responsible for ----------

- Talk about differentials
- To confirm diagnosis and rule out differentials I would like to do some investigations:
  - FBE
  - Lipase/Amylase
  - LFT, UEC, Lipids
  - USG
  - CT Scan

Management:

- Admit to hospital
- Pain relief
- NPO
- IV fluid
- If stone is a cause→ ERCP
- Alcohol counselling

Case:

You are in GP settings and your next patient is a 42-year-old Mary c/o epigastric pain and Indigestion and hx of black tarry stools

- Task
  - History
  - PEFE
  - DX and differentials

Differential diagnosis:

- PUD
- Gastritis
- GERD
- Gastric Ca
- Esophagitis
- Pancreatitis
- Left LL pneumonia
- ACS

History :

- Acknowledge concern
- Haemodynamic stability
- HOPI
  - 1.Pain questions(SIQORA-1)
    - Site- epigastrium
    - Intensity- offer painkiller
    - Quality – Burning pain
    - Onset—soon after meals
    - Radiation
    - Aggravating factor-worse with food
    - 1st time-- no
  - 2.Indigestion q's
    - Since when?
    - Any medicine you tried? (MYLANTA)

- Associated symptoms: n/v, fever
- Ddx questions
  - Any heartburn? Any acidic sensation in mouth?
  - Any history of painkiller use particularly NSAID's +/-
  - Any Binge drinking?
  - LOW +ive, LOA, Lumps and Bumps?
  - Pain related to fatty foods?
  - Any yellow discolouration of skin? Any itchiness?
  - Chest pain, racing of heart, SOB, sweating?
  - Waterworks?
  - Any change in bowels? NO. Any black tarry stools? YES
- SADMA
  - Smoking, Alcohol, Take away food positive
- PMHX and FHX

PEFE on card

card 1	OR card 2	OR card 3
All Normal	Pallor +	Left supraclavicular node +ive DRE- Dark Stools

Diagnosis and DDX

- From your history and examination you most likely have a condition called as PUD. It is an ulcer in your stomach. There are many trigger factors like smoking, alcohol, NSAID's, fatty and spicy meals, Helicobacter infection..
- What is worrying me in your condition is that you have lost weight and had black tarry stools which means you are bleeding from the ulceration that you have got. We will have to do some investigations to R/O any nasty growth.
  - FBE
  - Iron studies
  - Urea breath test
  - Endoscopy
  - Colonoscopy
  - FOBT
- Talk about differentials

Haematology

Topics

- Iron Deficiency Anemia
- Beta Thalassemia Minor
- Hemophilia Counselling
- Bleeding Disorders
- Anti Coagulant Therapy
- Retroperitoneal Hemorrhage
- Lymphoma
- CLL

Iron Deficiency Anemia

Case:

You are a country GP and yesterday saw a 45-year old woman who was feeling weak and tired, and you arranged for a FBC to be performed. She has now come back for the result, which is as follows

- Hb 8.5 g/dl (12-24)
- MCV 75 fl (80-95)
- WCC 8,000 (7000-9000)
- Platelets 255,5000 (150-250)

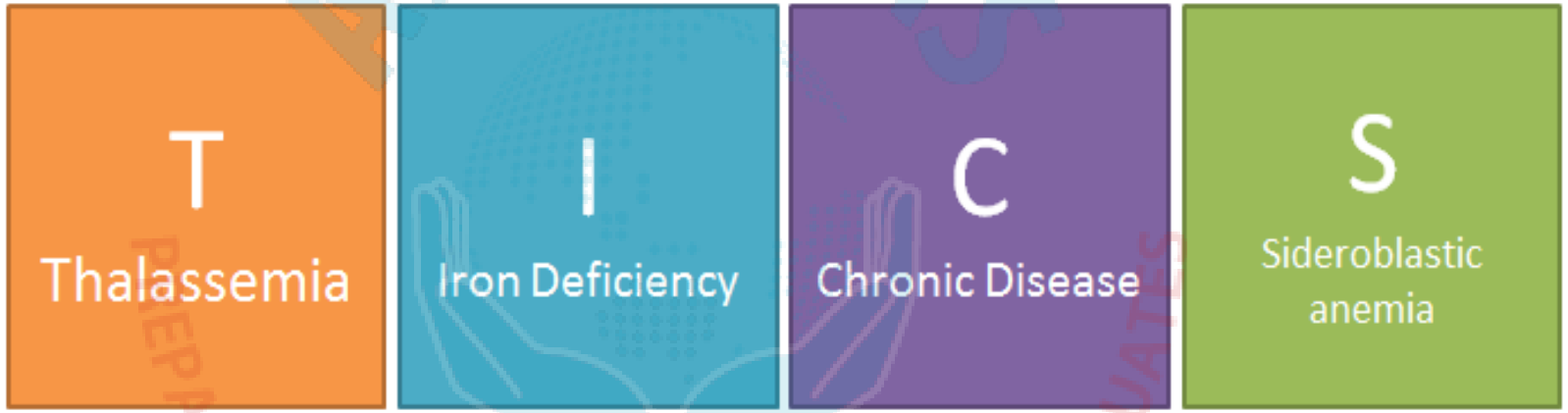
Task:

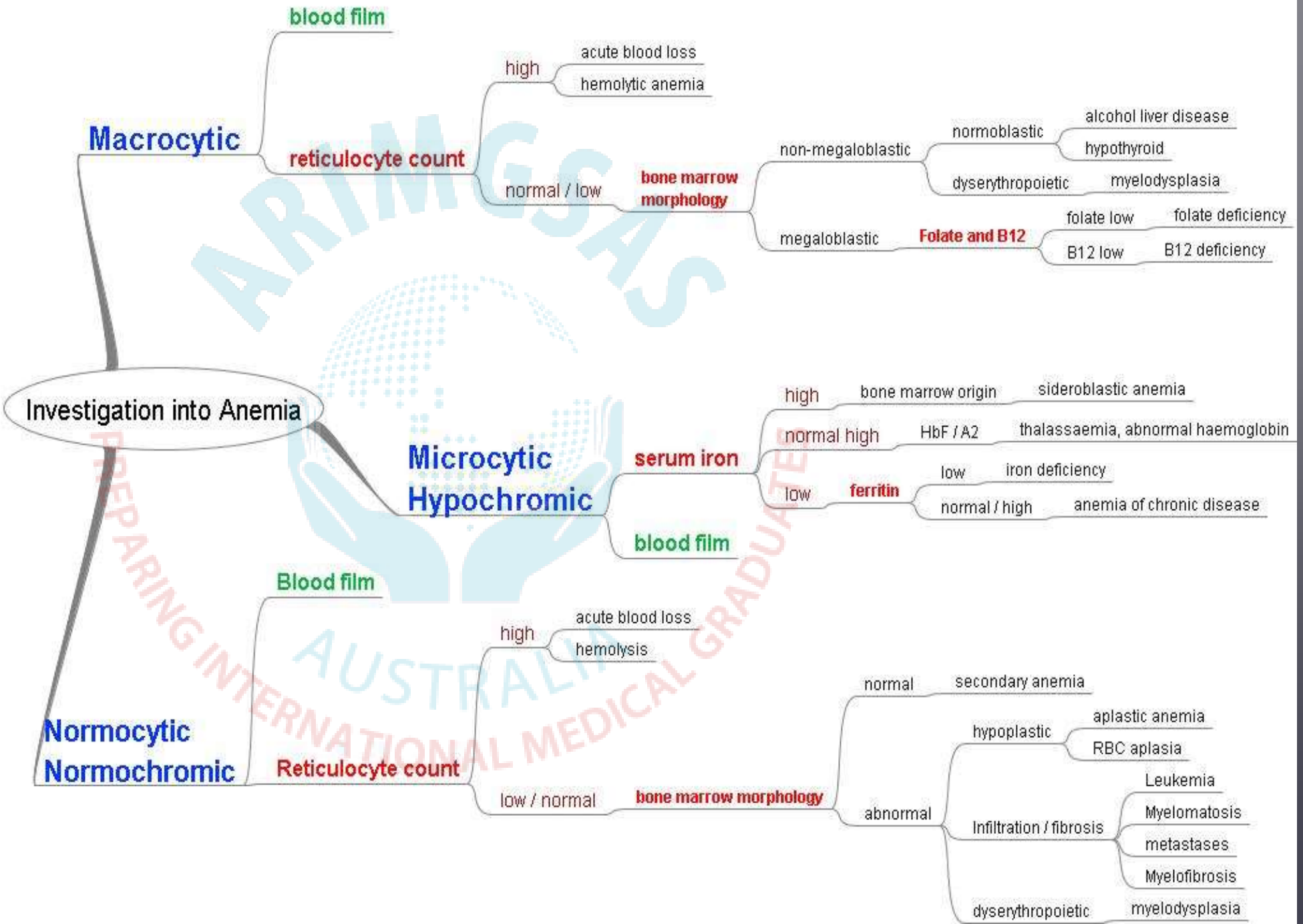
- Explain the result to the patient
- Answer her questions
- Describe to her your planned future management

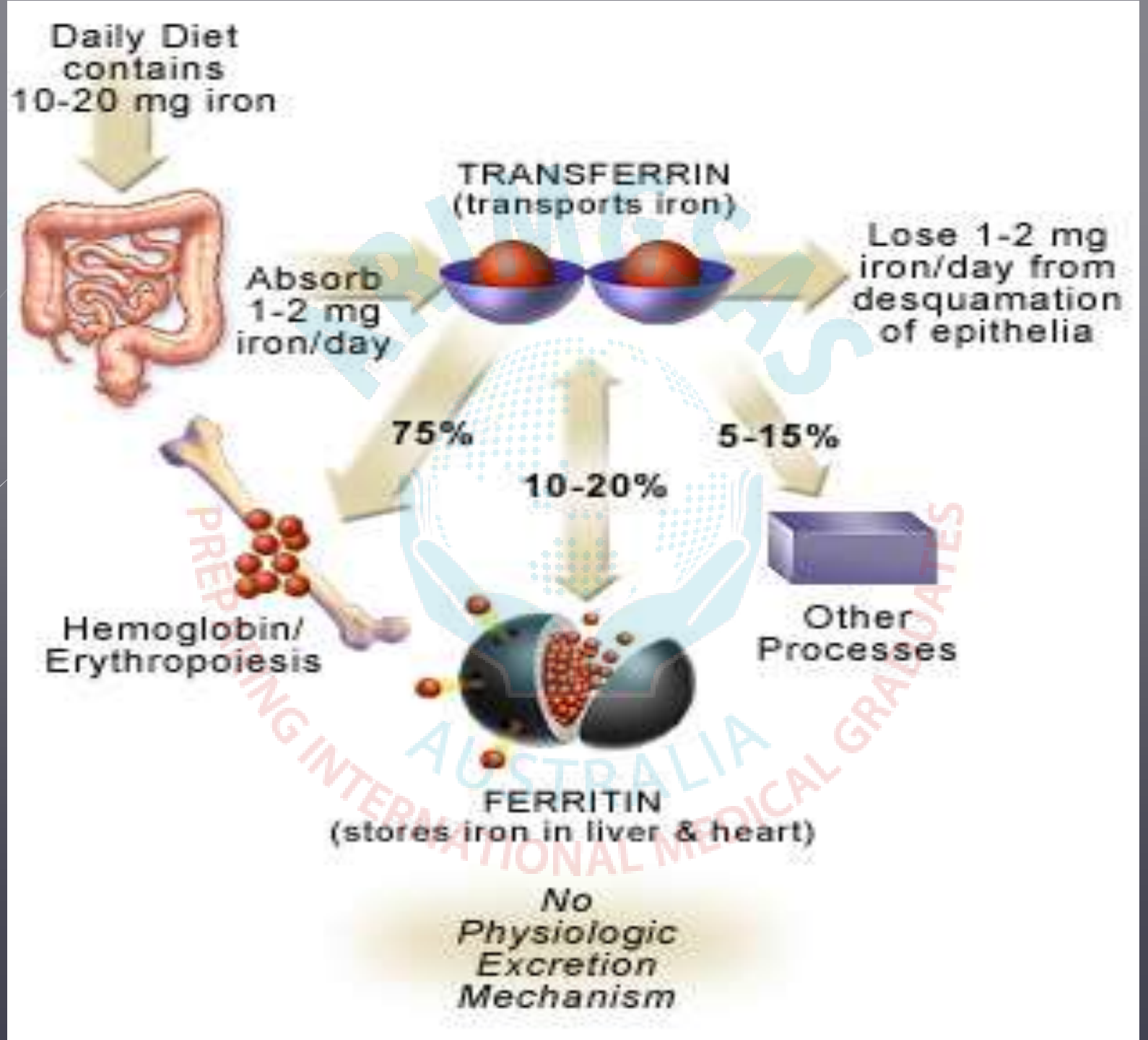
Causes of Microcytic Anemia

knowmedge

Mnemonic: "TICS"




Investigation into Anemia
Macrocytic
blood film
reticulocyte count
high
acute blood loss
hemolytic anemia
normal / low
bone marrow morphology
non-megaloblastic
normoblastic
alcohol liver disease
hypothyroid
dyserythropoietic
myelodysplasia
megaloblastic
Folate and B12
folate low
folate deficiency
B12 low
B12 deficiency
Microcytic Hypochromic
serum iron
high
bone marrow origin
sideroblastic anemia
normal high
HbF / A2
thalassaemia, abnormal haemoglobin
low
ferritin
low
iron deficiency
normal / high
anemia of chronic disease
blood film
Normocytic Normochromic
Blood film
Reticulocyte count
high
acute blood loss
hemolysis
low / normal
bone marrow morphology
normal
secondary anemia
abnormal
hypoplastic
aplastic anemia
RBC aplasia
Infiltration / fibrosis
Leukemia
Myelomatosis
metastases
Myelofibrosis
dyserythropoietic
myelodysplasia


Daily Diet contains 10-20 mg iron
TRANSFERRIN (transports iron)
Absorb 1-2 mg iron/day
Lose 1-2 mg iron/day from desquamation of epithelia
75%
10-20%
5-15%
Hemoglobin/ Erythropoiesis
Other Processes
FERRITIN (stores iron in liver & heart)
No Physiologic Excretion Mechanism

Causes of Iron Deficiency

Decreased iron intake

- Low socioeconomic status
- Vegetarian or vegan diets
- Lack of balanced diet or poor oral intake

Causes of Iron Deficiency

Decreased iron absorption

- Chronic renal failure
- Medications that decrease gastric acidity or bind iron
- Dietary factors
- Malabsorption:

e.g. coeliac disease, gastrectomy or intestinal bypass, chronic gastritis

Causes of Iron Deficiency

Increased iron requirements

- Growth: infants, children, adolescents
- Menstruation
- Pregnancy
- Lactation
- Multiparity

Causes of Iron Deficiency

Increased iron loss

Gastrointestinal blood loss:

- medication related, e.g, aspirin, NSAIDs
- malignancy e.g. colon
- peptic ulcer disease
- infection e.g. parasites
- Angiodysplasia

Non-gastrointestinal blood loss:

- menorrhagia
- iatrogenic e.g. repeated phlebotomy
- post-op patients with significant blood loss
- haematuria
- intravascular haemolysis
- extreme physical exercise

Signs & Symptoms of Iron Deficiency

- Asymptomatic!
- Weakness
- Headache
- Irritability
- Fatigue
- Exercise intolerance
- Glossal pain, dry mouth, atrophy of tongue papillae
- Alopecia
- Pica
- Restless leg syndrome

Lab Presentation of Iron Deficiency

- Low Hb, MCV and MCHC
- Low serum iron & transferrin saturation
- High TIBC
- Hypochromic, microcytic RBC on the blood film
- Gold standard (rarely done): no iron stores as observed by Prussian Blue staining of bone marrow aspirate
- Reticulocytosis and subsequent rises in Hb & Hct when oral iron is introduced

To detect the cause:

- FOBT
- Upper and lower GI endoscopy

Treatment of Iron Deficiency

- Iron deficient patients require about 150 – 200 mg/day of elemental iron.
- Dietry advice!
- commonly used 325mg tablet of ferrous sulfate TDS. Each tablet contains 65mg of elemental iron (195mg total).
- Ferrous fumarate has 106mg elemental iron/tablet.
- ferrous gluconate 28-36 mg/tab.

- Reticulocytes rise in 7-10 days
- Hb starts rising in 2 weeks but normalizes in about 8 weeks.
- Stores are built in about 6 months.

Side Effects

- Nausea and/or vomiting, constipation and epigastric discomfort affect up to 20 percent of patients.
- Liquid preparations and with food doses are better tolerated.
- Parenteral only in select patients e.g severe intolerance
- Blood transfusion if haemodynamically unstable due to active haemorrhage or who have signs of end-organ ischaemia

Beta Thalassemia Minor

Case:

You're next patient is a 24-year-old Greek lady presents at the GP clinic. She had a self-limiting febrile illness which was diagnosed as infectious mononucleosis. She is fully recovered now. On full blood examination, she was found to have hypochromic micryocytic anemia.

- FBE: 108 g/dl
- MCV: 68 (80101)
- Serum iron is normal
- Ferritin: normal
- No evidence of chronic blood loss

You suspect that she is having beta-thalassemia minor and confirm with hemoglobin electrophoresis. HbA2 – 4.2 (N:<2). She got engaged and her partner is from Greek descent. Her parents are well and she is worried about being told she has anemia. She is also concerned about her future kids.

Beta Thalassemia Minor

Task:

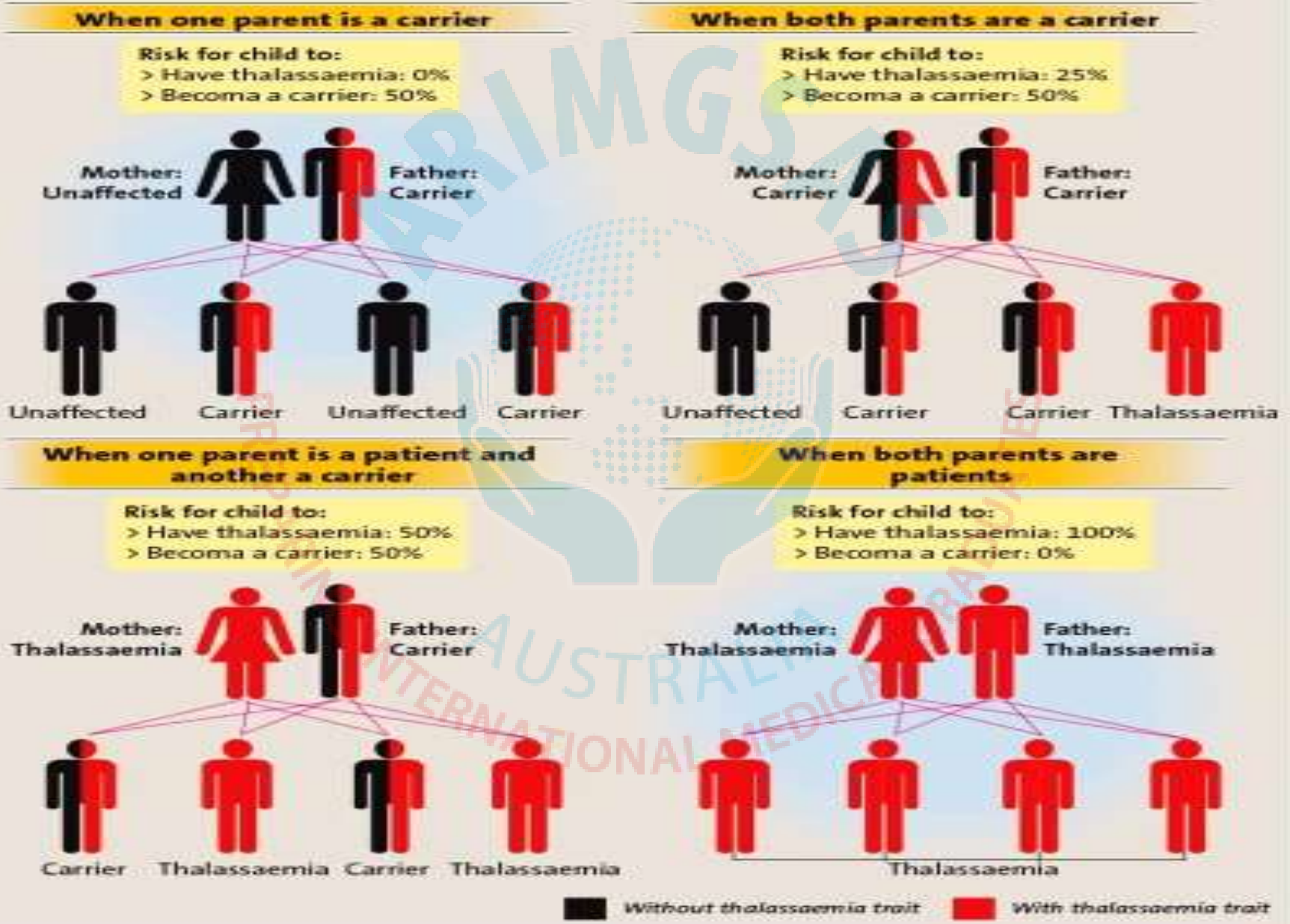
- Explain the nature of the condition
- Answer the patient question
- Advise the patient on management

Beta Thalassemia Minor

- Autosomal reccessive
- Affects both sexes equally

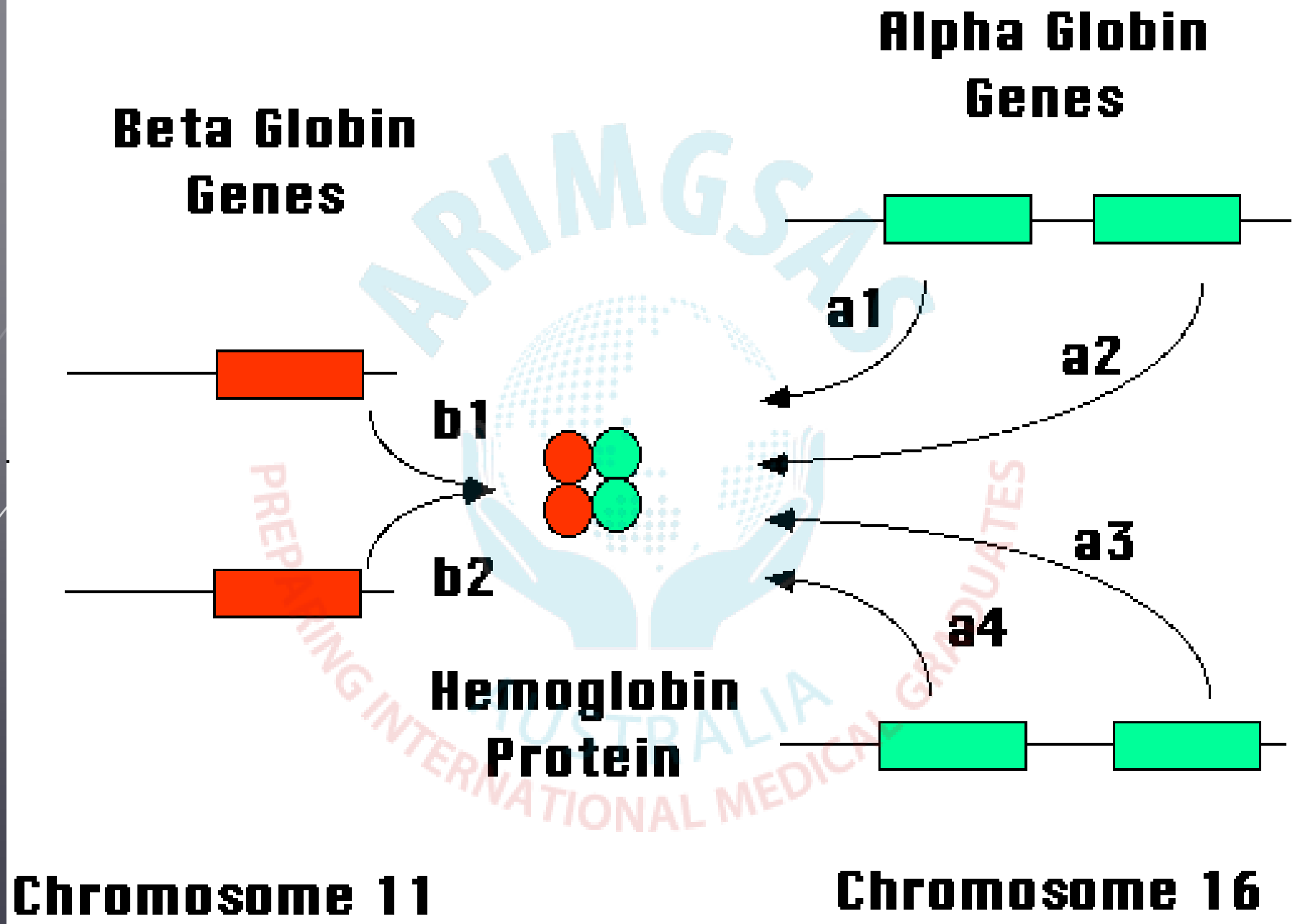
How the thalassaemia trait is inherited

This diagram shows the inheritance patterns of beta thalassaemia, where you will need two altered genes to get beta-thalassaemia major or intermedia. Other thalassaemias have similar inheritance patterns.



Beta Thalassemia Minor

- Beta thalassaemia minor is relatively common in Australia and around the world in people of Mediterranean backgrounds
- Alpha thalassaemia trait is seen commonly, mostly in Asian populations.
- Antenatal screening has allowed children being born with thalassaemia major to become a rarity.


Alpha Globin Genes
Beta Globin Genes
a1
a2
a3
a4
b1
b2
Hemoglobin Protein
Chromosome 11
Chromosome 16

Beta Thalassemia - Classification

- **Major** – effectively no HbA! Present in their first year of childhood and are transfusion dependent for life.
- **Minor** – slightly reduced Hb production! usually asymptomatic , recognised if blood tests are needed for other reasons, or at antenatal screening
- **Intermedia** – reasonable HbA production! usually asymptomatic, but may need transfusions.

Beta Thalassemia – Signs & Symptoms

- Symptoms of anaemia
- Symptoms of haemolysis
- Symptoms of increased erythropoiesis
- Symptoms of secondary organ damage caused by iron overload.

Beta Thalassemia – Diagnosis

- >3.5% HbA2 seen on electrophoresis.
- Iron deficiency anaemia must be treated before Hb electrophoresis is performed as low iron can decrease the amount of HbA2

Beta Thalassemia – Treatment

- **Minor**
  - Require no treatment during their lives. In some circumstances, including pregnancy, patients will require transfusion.
- **Major & Intermedia**
  - Monitored throughout life for progression of anaemia and for symptoms of thalassaemia.
  - If Iron deficiency diagnosed, patients should be treated with Iron 6mg/kg/day and folic acid 1mg/day therapy for four weeks.
  - Lifelong transfusion regime: if worsening symptoms of anaemia, failure to thrive or a Hb < 60 g/l or if Hb constantly falls below 70 g/l even after transfusions
  - Splenectomy for select patients
  - Chelation therapy if ferritin levels reach over 1000 mcg/l.

Beta Thalassemia – Screening

- CVS in the first trimester for genetic diagnosis and possible termination.

Hemophilia Counselling

Case:

You are a GP and a couple comes to your GP clinic for consultation. Their 18-month-old child has recently been diagnosed with hemophilia. Mrs. Smith wants to get pregnant and wants to know her chances of getting a child with hemophilia.

Task:

- Counsel regarding hemophilia
- Answer her questions

Hemophilia

- X-linked recessive bleeding disorder
- Mutations as well as sporadic cases.
- Affecting ~ 1 in 7000 males.
- Haemophilia A is Factor VIII (8) deficiency.
- Haemophilia B is Factor IX (9) deficiency.

	X	Y
X*	X*X (25%)	X*Y (25%)
X	XX (25%)	XY (25%)

Hemophilia – Clinical Features

Depends on concentration of clotting factors:

- Severe ,<1% clotting factor present, Frequent bleeding episodes common, predominantly into joints & muscles, spontaneously or after minor injury.
- Moderate,1-5%, Can bleed after minor injury. May have joint bleeding. Severe bleeding with trauma, surgery, invasive procedures.
- Mild, >5-40%, bleeding with major trauma, surgery, invasive procedures.

Hemophilia - Management

- Most bleeds will require factor replacement except for bruises and minor soft tissue injuries that do not impact on function and mobility.
- Invasive procedures such as arterial puncture, lumbar puncture must only be performed after clotting factor replacement.
- **Do not give IM injections.**

Hemophilia - Treatment

- Replace clotting factor!
- Admit if bleeding into critical areas e.g. intracranial, throat,haematuria etc.
- RICES for muscle and joint bleeds.
- Avoid aspirin/NSAIDS for pain relief. Can use paracetamol or morphine.
- DDAVP helps to release stored factor viii and vWF.
- Tranexemic acid Reduces breakdown of blood clots and is effective for treating and preventing recurrence of mouth bleeds and epistaxis.
- Following severe joint/muscle bleeds, the affected joint should be rested. For other joints, physiotherapy should commence as soon as pain has subsided and bleed has been controlled.

Pre-anesthesia Assessment (Bleeding Disorder)

Case:

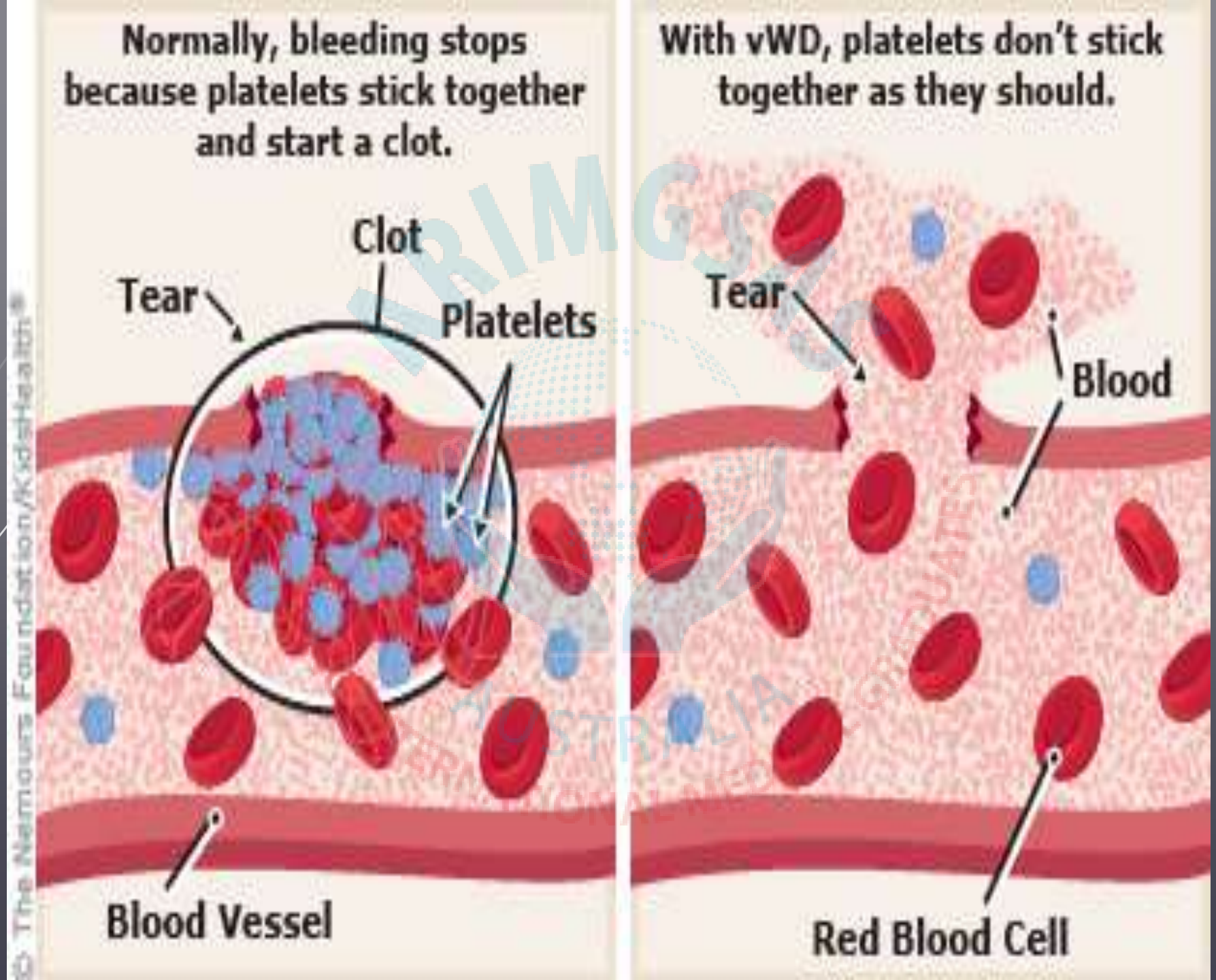
A 25-years-old female is in your GP clinic who has to have her wisdom tooth removed. A dental surgeon sent her to you for pre-anesthetic checkup/assessment.

Task:

- History (easy bruiser with minor trauma; several members of the family have similar problems)
- Organize investigations
- Results and treatment

Pre-anesthesia Assessment (Bleeding Disorder)

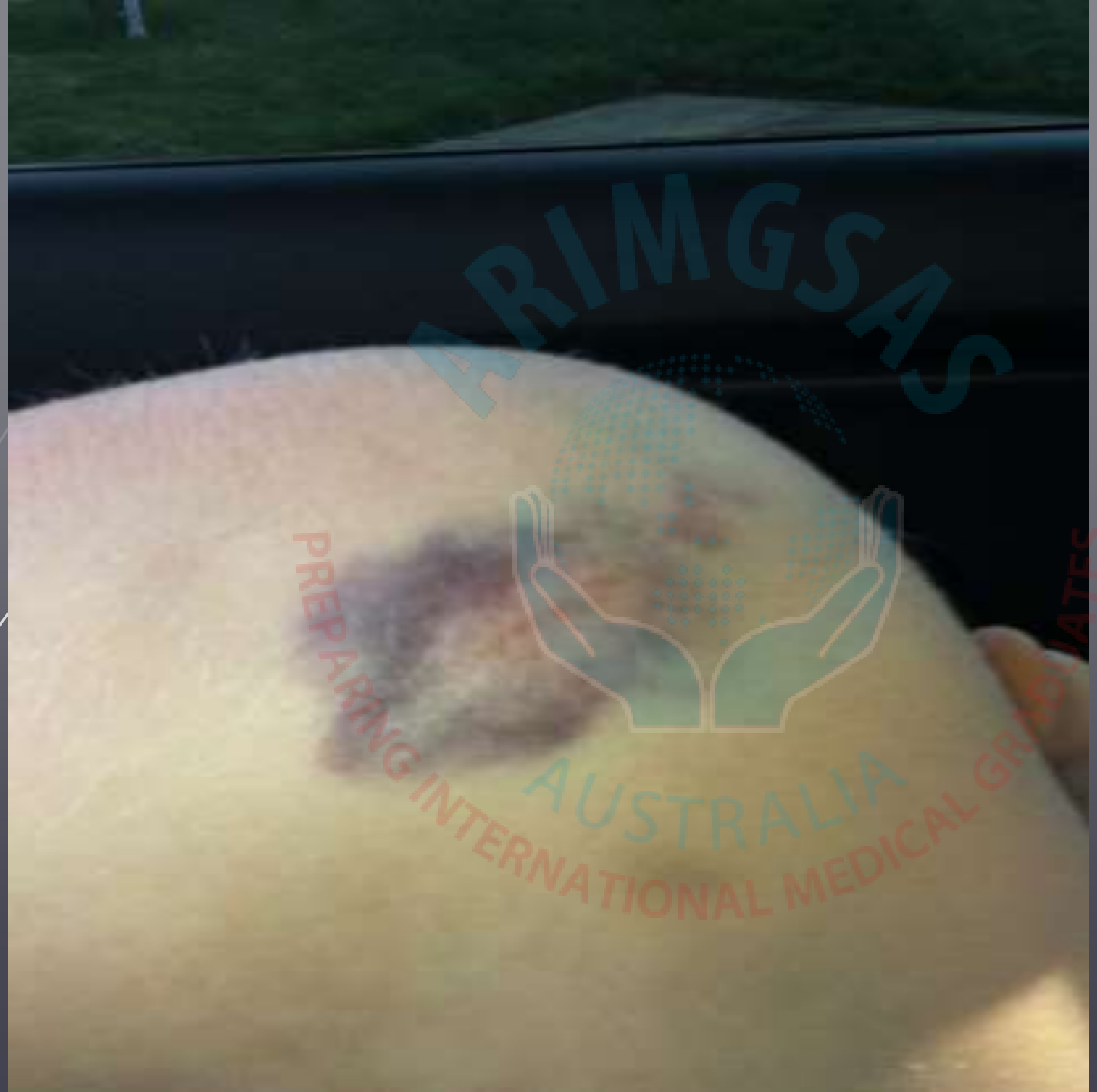
- Von Willebrand disease
- Most common inherited bleeding disorder
- Affects 0.1 - 1% of the population.
- Affects males and females equally.
- Deficiency (either quantitative or functional) in von Willebrand Factor.
- Causes inadequate platelet adhesion and secondary deficiency of Factor VIII.


Normally, bleeding stops because platelets stick together and start a clot.
Clot
Tear
Platelets
Blood Vessel
With vWD, platelets don't stick together as they should.
Tear
Blood
Red Blood Cell
© The Nemours Foundation/KidsHealth®

Pre-anesthesia Assessment (Bleeding Disorder)

Characterised by:

- easy bruising,
- bleeding from mucous membranes (particularly epistaxis, oral mucosa, menorrhagia)
- post-op bleeding.


ARIMGSAS
PREPARING INTERNATIONAL MEDICAL GRADUATES
AUSTRALIA

Types of vWD

- Type 1 (common): Reduced levels of vWF, usually mild bleeding
- Type 2 (uncommon): Abnormal structure and function of vWF, several variants, variable bleeding pattern.
- Type 3 (rare): Near absence of vWF, Patients behave like those with moderate to severe haemophilia

Assessment

- Assess site and extent of bleeding.
- Assess type and severity of vWD, if known.

Management

Antifibrinolytics (Tranexamic Acid)

- Often helpful for mucosal bleeding (most commonly seen)
- May be given alone or as adjunct therapy to DDAVP/factor concentrate.
- Dose of tranexamic acid (500mg tabs) 25mg/kg/dose (max:1.5g/dose) tds orally for 5-7 days

DDAVP (desmopressin)

- For mild to moderate Type 1 vWD. DDAVP challenge from around 5 years of age.
- Occasionally effective in Type 2 vWD,
- Never effective in Type 3 vWD.
- Two to three fold increase in Factor VIII/vWF level.
- Risk of hyponatraemia and seizures.
- Dose 0.3 microgram/kg in 50mls 0.9%NaCl given by intravenous infusion over at least 30 minutes.

Management

Von Willebrand Factor/FVIII Plasma Concentrate (Biostate)

- A human plasma-derived product, available from blood bank
- May be required in Type 1 vWD if severe bleeding or unresponsive to DDAVP
- Used to treat bleeding in patients with Type 2 and Type 3 vWD.

Anti-coagulant Therapy

Case:

Your next patient in your GP is a 60-year-old woman Mrs. Smith on warfarin for her AF. She missed her last appointment 2 weeks ago because she was having a cruise trip. Today, she is in your office for her routine INR check. You ordered INR and came back as 4.5

Task:

- History (took tablets for seasick; vomiting, not eating and drinking much).
- Physical examination (extensive bruising over the legs and arms; vitals normal; no carotid bruit; BMI, chest and heart are unremarkable; abdomen: soft, non-tender)
- Management

Anti-coagulant Therapy

- Mrs. Wilkes is a 60-year-old regular patient of the GP clinic where you work as an intern. She has been diagnosed with AF 5 years ago, since then she take Warfarin. She has been routinely come for check her INR every 2 weeks, however, she didn't come 2 weeks ago because she was on cruise trip to Fiji. She just came back yesterday. INR today is 4.5. She has no headache, no active bleeding, no gum bleeding, no nose bleeding, no abdominal pain, but since yesterday she notice some bruise over her legs and arms without any pain. No history of trauma. Stool and urine are normal in colour, frequency, and consistency. She has been menopause for 7 years and took no HRT. She doesn't have any back pain. She has never taken any mammogram.
- During the 2-weeks cruise trip, she took the medicine regularly, however, she had seasick in the first couple of days which she consulted GP in the cruise who gave her Maxolon tablets. She took some green leaf vegetable, but not much.
- She has no palpitation, no chest pain, no SOB.

Anti-coagulant Therapy

- PHx: AF for 5 years.
- FHx: unremarkable
- SHx: married with 3 adult children. Doesn't smoke, drink
- alcohol occasionally.

Physical examination:

- General appearance: 60 year-old well looking lady, extensive bruise over right arm and leg, but no active bleeding. BMI 29.
- Vital signs: 120/90 mmHg, 78x irregular, 16x, afebrile.
- Chest and heart: no carotid bruit, heart sounds are normal, no murmur. Lungs are clear, no added sound.
- Abdomen: soft, non-tender.

Anti-coagulant Therapy - Management

- Stop Warfarin
- Check INR daily
- Resume therapy at a lower dose when the INR approaches the therapeutic range

Management of Bleeding

Elevated INR but no clinical evidence of bleeding

- For patients with elevated INR but no clinical evidence of bleeding, always carefully reassess the need for warfarin therapy and remove precipitating factor(s) if possible.
- The bleeding risk increases exponentially from INR 5 to 9.
- Closely monitor any patient with an INR higher than 6.
- The onset of the effect of vitamin K on the INR can be expected within 6 to 12 hours.

Management of Bleeding

If the INR is higher than the therapeutic range but less than 5:

- Lower the dose or omit the next dose of warfarin. Resume therapy at a lower dose when the INR approaches the therapeutic range
- If the INR is only minimally above the therapeutic range (up to 10%), dose reduction may not be necessary.

Management of Bleeding

If the INR is 5 to 9:

- Cease warfarin therapy; consider reasons for elevated INR and patient-specific factors.
- Give vitamin K:
  - phytomenadione 1 to 2 mg orally
  - or phytomenadione 0.5 to 1 mg IV
- Measure the INR within 24 hours.

Management of Bleeding

If the INR is 9 or higher:

- Where there is a low risk of bleeding, cease warfarin therapy and give vitamin K
  - phytomenadione 2.5 to 5 mg orally
  - or phytomenadione 1 mg IV
- Measure the INR in 6 to 12 hours and resume warfarin therapy at a reduced dose once the INR is less than 5.

Management of Bleeding

- Where there is high risk of bleeding, cease warfarin therapy and give vitamin K:
  - phytomenadione 1 mg IV
- Also consider:
  - Prothrombinex-VF 25 to 50 units/kg IV plus
  - fresh frozen plasma 150 to 300 mL
- Measure the INR in 6 to 12 hours and resume warfarin therapy at a reduced dose once the INR is less than 5.

Management of Bleeding

- Any clinically significant bleeding where warfarin-induced coagulopathy is considered a contributory factor

- Cease warfarin therapy, and use:
  - phytomenadione 5 to 10 mg IV

  PLUS
  - Prothrombinex-VF 25 to 50 units/kg IV

  PLUS, if available
  - fresh frozen plasma 150 to 300 mL.
- Assess the patient continuously until the INR is less than 5 and the bleeding stops.
- If Prothrombinex-VF is unavailable, cease warfarin therapy and use:
  - phytomenadione 5 to 10 mg IV

  PLUS
  - fresh frozen plasma 10 to 15 mL/kg
- Assess the patient continuously until the INR is less than 5 and the bleeding stops

Retroperitoneal Hemorrhage

Case:

Mrs. Smith is an 83-year-old with back pain down to her left leg.

Task:

- History (had sciatica for 20 years?, bowel and bladder are okay, sharp pain, radiating to back of the pain, noted dizziness; had abdominal pain before; MRI before and had disc prolapse; feels sick but does not vomit; feverish and no joint pain; but has arthritis; medications include digoxin, panadol ostio, BP medication (atacan), warfarin for chronic AF)
- Physical Examination (looks pale, weak, very sick-looking, 128/44, HR 93 irregular, RR: 20, oxygen saturation 100, T: normal; bibasal crepitations, JVP normal; abdomen soft, mild diffuse tenderness, without organomegaly; normal bowel sounds; PR: normal and no tenderness; no motor or sensory defects, reflexes normal, mild pain with left hip flexion and IR; SLR positive bilateral up to 30 degrees)
- Differential Diagnosis
- Investigation (Hgb 5.2, MCV 65,WBC 6.2, Plt normal, reticulocyte count not done; ECG sinus rhythm, U&E pending, LFTs AST 714, ALT276, ALP normal, PT w/ INR 7, total protein and albumin 3.1, CT scan of abdomen:
- Management

Lymphoma

Case:

A 30-year-old comes to your GP clinic with fever for last 3 months.

Tasks:

- History (Fever, lymphadenopathy, splenomegaly, skin scratch marks, tiredness, weight loss, loss of appetite, night sweat, + lumps and bumps, bone pain,)
- Diagnosis and differential diagnosis

Lymphoma - Differential diagnosis

- Malignancy: Lymphoma, Leukemia
- Infection: IE, HIV, TB, EBV, Cytomeglovirus, Toxoplasmosis, Hepatitis, Ross river fever, Dengue, Malaria
- Connective tissue disease: Sarcoidosis, SLE/RA
- If associated with chills: Pyelonephritis, Cholangitis

Lymphoma - History

- When did you start to notice the fever? Is it Continuous or intermittent? Is it associated with Chills, night sweat, or Loss of appetite? Any lumps and bumps? Bone pain? Any itchiness? Any Headache or sensitivity to light and neck pain? Any history of URTI like sinusitis – nasal stuffiness or Sore throat or ear pain? Did you have any recent dental procedure? Any cough? Any sputum? Any SOB and chest tightness? Any discomfort in the tummy? Discoloration of the skin? Any bowel or urine problems? Joint pain? Skin nodules?
- Any recent travel history inside or outside Australia? Drinking or eating street foods? Any symptoms before and after? Did you practice safe sex while there? Any tattooing, body piercing or needle sharing? Any contact with patients having TB? Did you travel to mosquito-prone areas? Any contact with pets?
- Occupation? (Health care and social workers are more prone to exposure)
- Past history of Chest, heart infections or STDs
- SADMA

Lymphoma – Physical Examination

- General – tiredness, scratch marks
- Vitals – fever present
- Lymphadenopathy
- Chest, lungs and heart
- Abdominal – splenomegaly
- Urine dipstick – (-)

Lymphoma – Diagnosis & Management

- The most likely diagnosis is lymphoma. The differential diagnoses include infections and other CTD.
- Lymphoma is the cancer of lymphocytes that are present in lymph nodes and they usually present as enlargement of lymph nodes. These cells and nodes are important part of the immune system. It can also affect other organs in the body such as skin, brain, bowel and bones. To confirm the diagnosis, we need to do some investigations: FBE, UE, creatinine, LFT, CRP, ESR, Lymph nodes biopsy, Chest X-ray, CT or MRI – chest, abdomen, brain and Bone marrow biopsy and bone scan
- Treatment is chemotherapy and in some cases, radiotherapy and bone marrow transplant will also need to be done. The outcome will depend on histology result of types and age of the patient.

Herpes Zoster (CLL with Herpes Zoster)

Case:

Your next patient in GP practice is a 45-year-old man working in childcare. Since yesterday, he has had painful rash on the tummy and that patient has lost 6kg of weight for the last 2 months.

Task:

- History (2 days ago started with pain, redness then rash yesterday in abdomen; 6/10, felt tired for the last 2-3 months; rash was for the first time; no HTN, DM, surgeries, malignancies, no problem with waterwork and bowel motions)
- Diagnosis and Management

History

- I understand you came to see me because of your rash. Is it only there? How did it start? Did you take any medications for it? Is it happening for the first time? Did you apply any creams, perfumes or chemicals to this area? SORTSARA? Did you have any cold or flu before it started? Have you noticed any children in childcare with similar problems? Any fever or do you think you're hot?
- I understand that you lost weight recently, are you on any special diet? Do you feel tired? How is your mood? Do you still find things pleasurable? Any lumps and bumps in your body? Anyone in the family having similar condition? Any contacts with animals or pets? Whom are you staying with? Are you a happy family? SADMA?

Management

- From the history and the rash that I can see, you have a condition called herpes zoster or shingles. It is an infection from the virus that can cause chickenpox. Most likely, you got it from the workplace. The virus enters your body and goes to your nerve cells, stays there in an inactive form, and anytime your immunity is low because of any reason, it activates and appears like this condition.
- At this stage, I would give you a medical certificate to have rest and give painkillers. Since your rash started yesterday, I will give you acyclovir which is an antiviral. I would advise you to use cooling emollients. Do not scratch the lesions because it might spread to other parts. Wear loose cotton clothing, and avoid contact to other people. As I said, it flares up if you have low immunity, so I am concerned there might be something happening, so I need to check your lymph nodes for any enlargement and we will do some investigations to exclude some nasty things such as leukemias, lymphomas, infections, etc. We will do FBE, ESR/CRP, urine MCS, CXR, abdominal ultrasound, LFTs, RFTs, BSL and if you have any lumps and bumps, we might need to get a sample of tissue for investigation in the laboratory.
- Reading materials. Review once results are back.
- Red flags: worsening of rash, high fever, headaches, neck pains, confusion

Signs & Symptoms

- Typical shingles case PLUS: constitutional symptoms like malaise, weight loss, fever; LAD of neck, axilla, groin (80%), moderately enlarged spleen and liver (50%), mild anemia, lymphocytosis $>15x10^9/L$
- Management
  - Explain shingles and need to investigate LAD
  - Need for urgent referral for biopsy
  - HZ is mildly contagious but avoid contact with infants and young children who have never had chickenpox and avoid contact with the immunocompromised and those undergoing chemotherapy
  - Consider giving VZIG to those immunocompromised contacts who have no history of varicella
  - Medications: calamine lotion, analgesics, antiviral therapy to reduce duration
    - Treated within 72 hours of onset of vesicles
    - >50 years of age
    - Immunocompromised
    - Acute severe pain
    - With involvement of special areas (eye, perineum)

headache

Headache

Acute:

1. Sub Arachnoid Haemorrhage: occipital headache + vomiting + neck stiffness; *"**worst headache of my life**"*
2. Infections: Encephalitis, Meningitis ***
3. Subdural hematoma
4. Trauma
5. Temporal arteritis
6. Acute Glaucoma

200 Chronic Headache

1. Migraine (3)
2. Tension Headache
3. Behavioural (Psychogenic)
4. Vision problem, glaucoma
5. Sinusitis
6. Cervicogenic headache
7. *Analgesic overuse*
8. *Medication use e.g. OCPs*
9. *Brain tumour*

- MCC of headache in GP- URTI
- ***MCC of chronic headache***- TTH or Migraine

Red flags for Headache

- Headache exacerbated by coughing, sneezing or straining- ***raised intracranial pressure***.
- Headache provoked by postural change (stooping or bending)- imaging is required to exclude some of these headaches, which require emergency intervention.
- Headache associated with eye movement and blurred vision- ***Temporal Arteritis or Retro Bulbar Neuritis***
- Headaches of sudden, severe onset (thunderclap) – SAH
- Headaches with new-onset neurological signs (sensory changes, weakness, diplopia, Horner's Syndrome, visual field defects)
- Headaches associated with stiff neck, generalized aches/pains, rash, malaise, altered consciousness or confusion. Headaches failing to respond to appropriate therapy.

Migraine and Tension-Type Headache are 2 ends of a continuum

Patients may have classical features of TTH, or features of both TTH and migraine, termed tension-vascular headaches (T/V), or features of migraine

- In the continuum model the patient may move along the continuum from TTH to T/V to migraine or in the reverse direction
- The value of the continuum model is the selection of the treatment – either for TTH, T/V or migraine – determined by the patient's position on the continuum at the time of presentation
- TTH prophylaxis – tricyclic antidepressants
  T/V prophylaxis – propranolol
  Migraine prophylaxis – pizotifen

Source: afp, RACGP

Case 1: Your next patient in the ED is a 36-year-old lady, Jane, who woke up this morning feeling dizzy, almost like loosing her balance when she tried to get out of bed. She felt rather nauseated. She also experienced some light spots and some flashing in her right eye followed by a severe *right sided headache*. She can't stand looking into light (*Photophobia*) and noises (*Phonophobia*) exacerbate the headache.

Task

- Take history
- Ask the examiner about examination finding
- Tell the patient differentials
- Discuss management options with her

History

GM, I am Dr. Kalsi, may I know you name please? Do you have any pain at the moment? Do you need some painkillers? Since when are you having this pain? How bad is it? What type of pain is it? Is it pulsating, throbbing or a dull ache? Is it one sided of all over your head? When the pain starts, where does it start first? How does it progress? ***Any pain anywhere else especially neck?***

- Do you get any symptoms before the headache starts e.g. flashes of light, changes in your sense of smell, nausea or vomiting? *Do you think your headache is related to food especially red wine, cheese, chocolate, bananas, Chinese food, coffee? Is it aggravated by movement, noise or light?*
- ***Is it worse in the morning or at the end of the day? Or is it worse on weekdays or weekends.*** Any kind of stress at the moment? **Tension Headache**

- How many episodes have you had previously? How long does it last? Have you taken any medications? *To rule out analgesic abuse?*
- ***Did you have fever recently? Any viral infection recently? -Sinusitis***
- ***Any trouble with vision?*** Do you feel numbness or weakness or pins & needles in any part of your body? Did you hurt yourself in your head? What is your occupation? Any stress at work or home? Any financial problems recently?
- How are your periods? When was your LMP? Do you think your headaches are related to your periods? How's your general health? Any history of HTN or DM?
- Are you sexually active? Are you in a stable relationship? *What is the contraception you use?*
- **Any family history of migraines?** SADMA?

Physical examination

- General appearance: *pallor, jaundice*
- Vitals-very important as high blood pressure can also cause headache.
- HEENT:
  - *Signs of runny nose or watery eyes, Sinus tenderness*
  - Check for PEARL (Pupil equal and reactive to light); Fundoscopy
  - Signs of meningism (checking neck stiffness is must)
  - *Any pulsating blood vessel* over the forehead
- Auscultate chest and heart
- **CNS**: *A thorough neurological exam is essential for all patients with headache that include Cranial Nerve Exam and* ***IPTRSC (Inspection, Power, Tone, Reflexes, Sensations, Coordination) in both upper and lower limbs***

Management

Mark, most likely you have a common condition called migraine. ***10% of world's population suffers from migraine***. *The trigger factors including: fatigue, hunger, strong odors, excessive noise, hormonal changes, and certain kinds of food.* ***The exact cause is not known but it is thought to be due to*** **dilatation** of the blood vessels outside the brain.

Treatment focuses on two aspects: *prevention* and *abortive*

For prevention:

- Lifestyle modification (SNAP), Relaxation Rx, stress management. ***If on OCP, STOP IT, because it might aggravate migraine. (OCP is contraindicated in migraine with aura)***. Identification and avoidance of trigger factors. It is important to identify possible trigger factors like:
  - Food: cheese, oranges, tomatoes, red wine, caffeine, chocolate
  - Drugs: OCPs, nitrates, indomethacin
  - Fatigue / tiredness / exhaustion / stress / hunger /Noise / light

*Treating the **acute attack**:*

Rest in a quiet dark room, avoid reading / TV, apply cold packs to head, and medications. Where headaches occur *less frequently than once per fortnight*, it seems acceptable to use pulse therapy, such as simple analgesia with aspirin, diclofenac, ibuprofen, naproxen, paracetamol or similar agents.

- ***Mild migraine**:* soluble aspirin or PCM 500mg 2-3 tabs 4 hourly + an antiemetic e.g. Maxolon® (metoclopramide) 10 mg
- ***Moderate***: Naproxen (250 mg) 750 mg to maximum of 1250 mg in 24 hours).
- ***Severe:*** Imigran® (sumatriptan) 50 mg tablet repeat in 1 hour, or injection

Pain relievers should not be used too often because overuse can lead to medication-overuse headaches or chronic daily headaches. If you respond to a pain reliever, you should continue taking these with each headache. However: *Do not use pain relievers more than nine days per month on average,* or more than two doses per episode. If a pain reliever does not control your headache, talk to your healthcare provider for other suggestions.

Where headaches occur *more frequently than once per fortnight*, prophylaxis should be offered and the choice determined by the headache type

- ***Pizotifen malate*** (***sandomigran***, serotonin antagonist). *Pizotifen is the agent of choice for prophylaxis of migraine. Fatigue, drowsiness, and hunger (weight gain) are the two most common adverse effects associated with Pizotifen.*
- TCAs (impaired alertness, anticholinergic, autonomic side effects)
- *Beta blockers* (CI asthma, bradycardia)

Case 2: In GP Mr. Jim Jones presents with his 10-year-old daughter, Anastasia, who has been complaining about headaches for quite some time but recently they have increased in severity with sensitivity to light and the parents are very concerned because she missed school on a number of occasions. Mother and Father have migraine.

Task:

- Take relevant History
- Ask PE findings from examiner
- Discuss Diagnosis and Manage the Patient

History: Add BINDARS, Ask about school performance (and is he playing normally?)

Physical Exam: Ask about growth chart

Management: Main difference, don’t use Triptans < 12 years

2


ARIMGSAS
AUSTRALIA
PREPARING INTERNATIONAL MEDICAL GRADUATES

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Your next patient in general practice is a 30-year-old Mrs. Shinners complaining about headaches for the last 3 weeks.

Task:-

- Take history
- Ask PE findings for the examiner
- Discuss the diagnosis and management with the patient

History:

GM, I am Dr. Kalsi, May I know your name please. Do you have any pain at the moment? Do you need some painkillers? Since when are you having this pain? How bad is it? What type of pain is it? Is it pulsating, throbbing or a dull ache? Is it one sided of all over your head? When the pain starts, where does it start first? How does it progress? ***Is it aggravated by movement, noise or light? Does it vary with the day?***

- Do you get any symptoms before the headache starts e.g. flashes of light, changes in your sense of smell, nausea or vomiting?
- Is this the first time? How many episodes have you had previously? How long does it last? ***Is it worse in the morning? Any weight loss?***
- Any lumps or bumps in the head? ***Any problems with vision? Cough or colds?***
- ***Did you have fever recently? Any infection recently? Are you taking any medicines (analgesic abuse)?***

- Do you feel numbness or weakness or pins & needles in any part of your body? Did you hurt yourself in your head? ***Do you think your headache is related to food especially red wine, cheese, chocolate, bananas, Chinese food, coffee?***
- How's your general health? Any history of HTN or DM?
- HEADSS: What is your occupation? Any stress at work or home? Any financial problems recently? Are you a happy family?
- How are your periods? When was your LMP? Do you think your headaches are related to your periods? Are you sexually active? Are you in a stable relationship? What is the contraception you use?
- **Any family history of migraines?** SADMA

Physical examination

- General appearance: *pallor, jaundice, dehydration, rash.*
- Vitals-very important as high blood pressure can also cause headache.
- HEENT:
  - ***Signs of runny nose or watery eyes****; Sinus tenderness*
  - Check for PEARL (Pupil equal and reactive to light); Fundoscopy
  - Signs of meningism (checking neck stiffness is must)
  - *Any pulsating blood vessel* over the forehead
- Auscultate chest and heart; LN
- **CNS**: *A thorough neurological exam is essential for all patients with headache that include Cranial Nerve Exam and* ***IPTRSC (Inspection, Power, Tone, Reflexes, Sensations, Coordination) in both upper and lower limbs.***

Diagnosis: Tension headache

Reassurance and patient education that these headaches come from the scalp muscles which get tense and tight. Mind body Axis.
LSM (SNAP) and counseling:

- Relaxation techniques (yoga, meditation, hot baths etc.)
- Try to be less of a perfectionist, Regular breaks at work
- Simple analgesics, avoid strong ones!!! No tranquilizers or antidepressants unless other methods don't work.
- **Rule out depression**
- Follow-up

Where headaches occur *more frequently than once per fortnight*, prophylaxis should be offered and the choice determined by the headache type. *TTH is best managed with tricyclic antidepressants (amitriptyline where sleep disturbance is a prominent feature and imipramine where sleep does not pose a problem).*

Critical errors

- *Failure to request blood pressure and ophthalmoscopy findings.*
- *Failure to indicate the most likely cause is tension headache and that a serious cause is most unlikely.*

SEP

Mr. Grant Fisher brings his seven-year-old daughter, Sharon who is complaining of recurrent headaches into your general practice.

Your task is to:

- Take a history.
- Examine the girl.
- Discuss differential diagnoses, possible investigations and management with the father.

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Same as History: Add BINDARS, Ask about school performance (and is he playing normally?)

Physical Exam: Ask about growth chart

Management: Main difference, don't use Triptans < 12 years

Diagnosis and Management

- Your child most likely has a condition called ***tension headache***. Tension Headaches is due to muscle spasm of the muscles of your scalp. The muscle spasm is due to stress that she is having. Our mind and body are connected with each other. Our body reacts differently to stress and in your child's case, she reacts to stress with headache. It is affecting her, so if we decrease or treat the stress the headache would hopefully decrease as well. Her headache is genuine but not organic in origin.
- ***The reason most likely is because you don't have time for Mary and she's probably missing that***. I would like to arrange a family meeting. I would like to see your wife as well. For her pain, you can give her panadol. I would like to refer her to the counselor. They are experts. I would organize a social worker to liaise with the school (for school issues).

- ***Are you sure?*** **Yes, from all the information you have given, I believe it is a tension headache.**
- *Can you refer me to a specialist?* I am happy to refer you to a specialist for a 2nd opinion. If he needs to have some more investigations, she may request to do so.
- Review. Reading material. Red flags: Vomiting, Fever, Rash. **MRI preferred in children than CT scan (less radiation exposure)**

3


ARIMGSAS
PREPARING INTERNATIONAL MEDICAL GRADUATES
AUSTRALIA

You are a GP and your next patient is a 10-year-old girl brought by her mom due to headaches for the last 6 months.

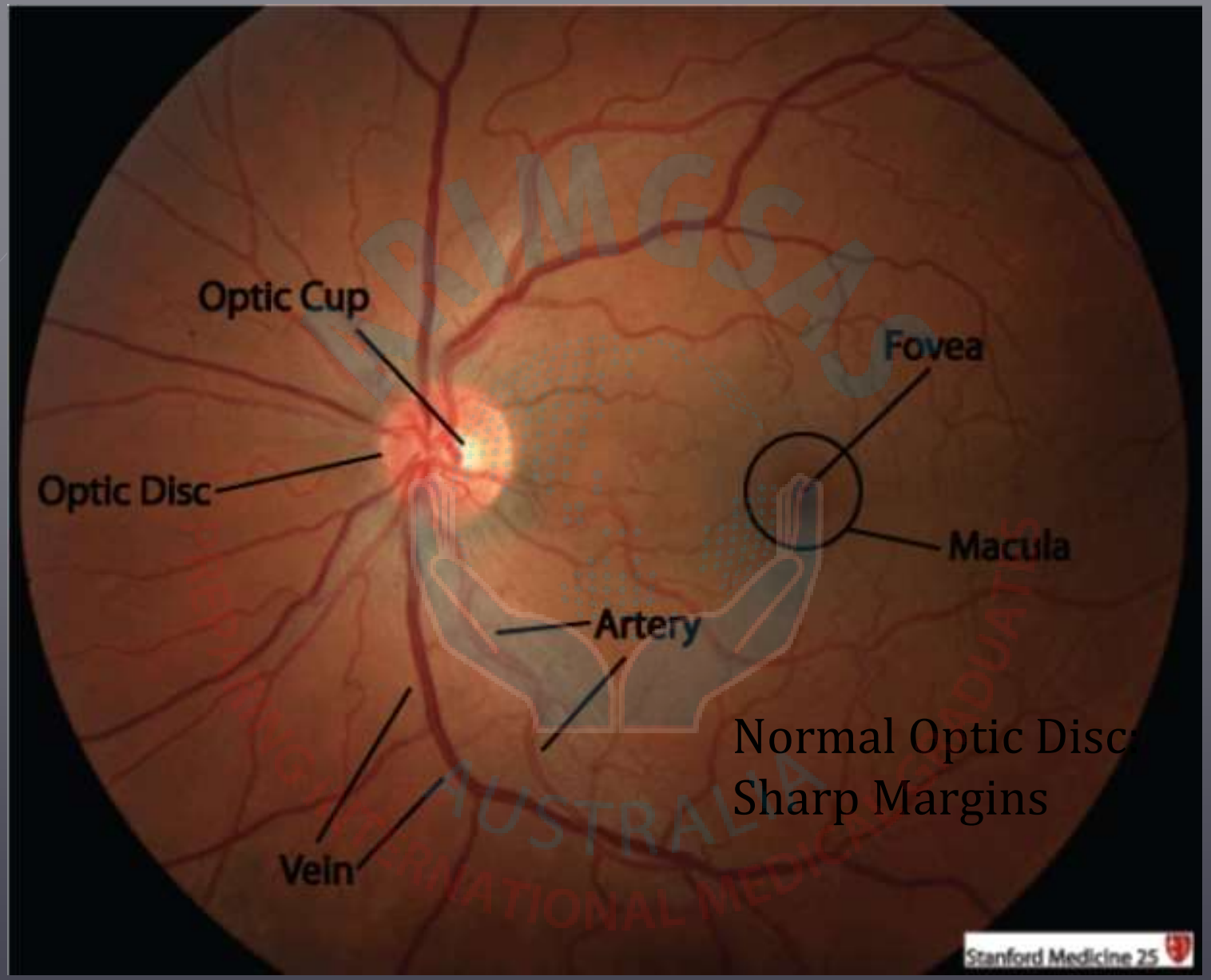
Task:

- History
- Physical examination from examiner
- Diagnosis and management

History: As in previous case

Physical Examination

- General appearance – Growth charts, Head circumference.
- Vital signs**: especially BP (*140/90*); PR: *70*/minute → shows Cushing's reflex**
- Eye: visual acuity, PEARL, eye movements to check for diplopia, nystagmus, **fundoscopy (swelling and blurring of optic disc)**, visual fields
- ENT: exclude sinusitis (tenderness of sinuses), **neck stiffness**
- **CNS**: *A thorough neurological exam is essential for all patients with headache that include Cranial Nerve Exam and **IPTRSC (Inspection, Power, Tone, Reflexes, Sensations, Coordination) in both upper and lower limbs.***



Normal Optic Disc:
Sharp Margins

Diagnosis and Management

- From history and PE findings, most likely your child has increased pressure on the brain which can be due to a nasty growth or brain tumor. I do not mean to scare you but she needs to be evaluated further ASAP.
- **I will call the ambulance and send you to the hospital where she will be seen by a pediatric neurologist**.
- To find the cause, she needs an MRI scan to see inside the brain and locate the abnormality, and if confirmed, she may need surgery and that will be decided by the specialist and will be followed-up on a regular basis.

What if you don't recognize Papilledema???


ARIMGSAS
PREPARING INTERNATIONAL MEDICAL GRADUATES
AUSTRALIA

Case 6: 66-YEAR-OLD FARMER. NO PAST MEDICAL HISTORY. HE NOTICED SUDDEN SHARP PAIN AT THE BACK OF THE HEAD WHILE HE WAS MAKING HIS FENCE. HE LAID DOWN AND PAIN WAS RELIEVED AFTER HALF AN HOUR. NO FURTHER TROUBLE. BUT 5 DAYS LATER, HE WOKE UP WITH GENERALIZED HEADACHE. *HE HAD DOUBLE VISION*. HIS WIFE DROVE HIM TO THE NEAREST HOSPITAL WHERE YOU ARE WORKING AS AN HMO.

Task

- History (headache going to the neck)
- Physical examination (ptosis, dilatation of pupil, neck stiffness)
- Management

Intro: Is my patient haemodynamically stable?

GM, I am Dr. Kalsi, may I know you name please? Do you have any pain at the moment? Do you need some painkillers? Since when are you having this pain? How bad is it? What type of pain is it? Is it pulsating, throbbing or a dull ache? Is it one sided of all over your head? When the pain starts, where does it start first? How does it progress? ***Is it aggravated by movement, noise or light? Does it vary with the day? Any pain in you jaw while eating?***

- Do you get any symptoms before the headache starts e.g. flashes of light, changes in your sense of smell, nausea or vomiting?
- Is this the first time? How many episodes have you had previously? How long does it last? ***Is it worse in the morning?***

- ***Any problem with vision? Do you see the thing double? Did you have fever recently? Any infection recently? Are you taking any medicines?*** Do you feel numbness or weakness or pins & needles in any part of your body? Any weakness in any part of your body? Did you hurt yourself in your head? ***Any facial symmetry? Any trouble with speaking?***
- ***Do you think your headache is related to food especially red wine, cheese, chocolate, bananas, Chinese food, coffee?*** How's your general health? Any history of HTN or DM? What is your occupation? Any stress at work or home? Any financial problems recently?
- **Any family history of migraines?** SADMA?
- Have you been diagnosed with high blood pressure? Any medical condition you are having?

233Physical examination

- General appearance: GCS 15/15
- Vital signs and BMI (BP increased, pulse decreased)
- **HEENT**
  - **Eyes**: (**3rd nerve compression** from PCA rupture): Lid: Ptosis, Eyeball: down and out eye, Pupil: absent light reflex, accommodation, pupillary dilation
  - Ocular Movement: diplopia
  - Pulsating artery over forehead: Temporal Arteritis
- Fundoscopy: papilledema
- Neck stiffness: Meningeal signs may be positive.
- Cardiac examination
- Abdomen: Palpable Kidneys: Polycystic Kidney Disease
- Neurologic examination: Cranial nerve examination, IPTRSC in both upper and lower limbs.

Diagnosis and Management:

Mark, it seems that most likely you have a condition called Sub- Arachnoid Haemorrhage. It is a condition where blood leaks out of the blood vessel in the subarachnoid space in your brain. ***It is a medical emergency and requires immediate management.***

- You will be seen by the neurosurgical team and investigations will be done ***especially CT scan***. If negative (10-20%), a lumbar puncture will be done (xanthochromia).
- To confirm where the bleed is, a cerebroangiography will be done. This is a procedure in which a special dye is injected in the vessels through catheter and x-ray is taken to detect/check movement of the dye and **site of hemorrhage**.
- Management involves stabilization of patient's condition, oxygen and IV line, painkillers, medicine for vomiting/anti-emetic.
- To prevent delayed cerebral ischaemia: The neurosurgeon may go for *neurosurgical clipping* (A metal clip is used to close aneurysm around its neck) or *coiling* (tiny coils are placed to block flow of blood into aneurysm to prevent hemorrhage)

Complications can occur before or after medical treatment, and can include:

- **Re-bleed**
- **Cerebral oedema**
- **Seizures**
- **Cerebral vasospasm:** *Nimodipine to prevent spasm of vessels*.

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You are working in a general practice. This 58-year-old woman has consulted you about the recent onset (two weeks) of right-sided headache gradually becoming more and more severe, and which is now constant. *Over the last few days, the patient has also had a tight feeling in the muscles on the right hand side of the face when chewing.* On physical examination you noted tenderness and tortuosity over the right temporal artery as illustrated. Its pulsation cannot be felt as well as that of the temporal artery on the left. There were no other abnormal physical findings. The patient is normotensive.

- Based on this information you believe that the most likely cause of the patient's symptoms is *temporal arteritis* ('cranial arteritis' or 'giant cell arteritis').
- Brief Patient Profile: Married, works as an accountant. Nonsmoker. No significant past or family history except for occasional migraine. Has been taking Panadol® (paracetamol 500 mg) for the headache.
- Your tasks are to:
  - Explain the diagnosis, and its implications, to the patient.
  - Advise the patient about management — both immediate and long-term. This could include any investigations you believe are necessary. You do not need to take any further history. You have just concluded your physical examination and are about to advise the patient of your diagnosis and management plans. [L SEP]

Questions to ask unless already covered:

- *Could it be a migraine? Are there any (other) complications? Are you sure that my eyesight will be all right?*
- *Should I see an eye specialist? Isn't "cortisone" dangerous?'* (If 'cortisone' or 'steroids' are recommended). *What are its side effects?*
- *How long will the headache last once treatment lasts? How long will I be on "cortisone"?*
- *Can this trouble affect me in any other way?'* [L SEP]

Diagnosis and Management

- Mark, You have a condition called temporal arteritis. Do you know anything about it? *It is the swelling of the blood vessels, particularly of the temporal artery over your forehead which is causing the headache.*
- Unfortunately, it is a serious condition if not managed adequately as it can lead to *loss of vision*. But don't worry, its good thing that you have come here today. I would like to organize some investigations (***Urgent ESR with request of same day report, FBE, CRP)*** to confirm, but before that we need to give you a high dose steroid (**prednisolone: 60-100 mg)** to reduce the inflammation, otherwise, it can cause serious side effects like blindness. These steroids will be reduced until the ESR is *normal then low-dose steroids for 2-3 years.*
- *In addition, 75 mg aspirin (if no contra-indications) and a proton pump inhibitor should be started.*

- I would like to give you an *urgent referral to the ophthalmologist and vascular surgeon to do a temporal biopsy to confirm the diagnosis*.
- *Once symptoms are controlled and ESR levels fall, the prednisolone can be reduced to maintenance levels (5-10 mg three times daily).*
- The patient should be monitored closely by continuing review of symptoms and serial ESR levels.
- ***What are the side effects of steroids?*** long-term effects of steroids include osteopenia and osteoporosis, hypertension, diabetes, increased body weight, changed faces, cataract, and gynecomastia, low immunity. Do not worry. We will regularly monitor you to check for development of any side effects (Dexa scan, vitamin D and calcium every 6 mos. for age >60).
- Reading material. Review in 48 hours. Red flags: worsening of headaches and visual problems

Features of Temporal Arteritis

Headache:

Jaw pain while chewing food

Visual disturbances: Ischemic optic neuritis in around 50% of cases.

If temporal arteritis remains untreated, the second eye may become affected within 1-2 weeks.

Leg Pain

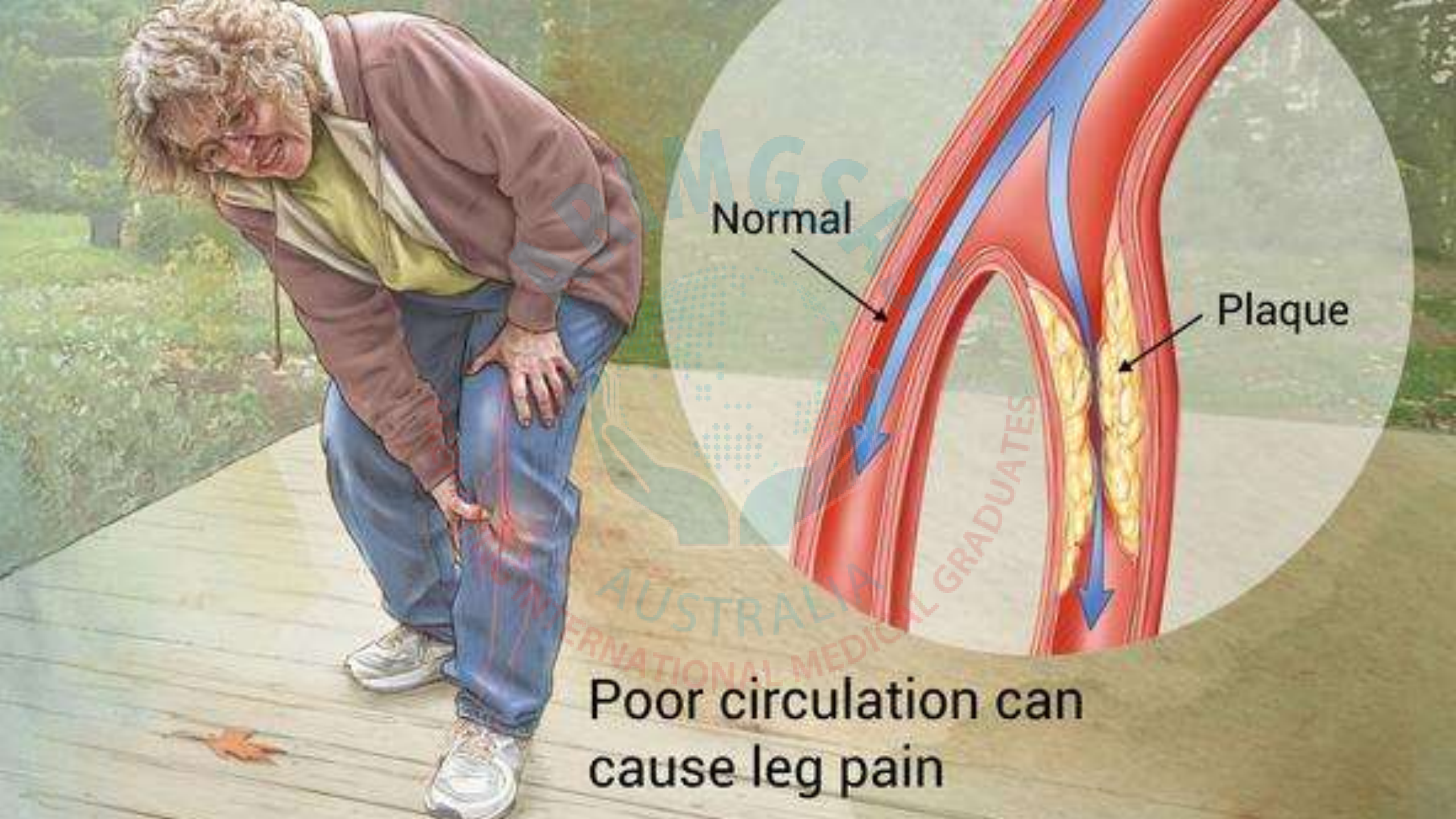
Case

57-year-old man comes to your GP clinic with complaints of pain in right leg. He is a known case of diabetes.

- Task
  - History
  - PEFE
  - Investigation
  - Diagnosis and Differential Diagnosis

Differential Diagnosis

- L-VANS
  - L : Lymphangitis
    Lymphedema
  - V: Vein – DVT, Varicose veins
  - A: Arteries - PVD
  - N: Nerves - Neuropathic pain, Lumbar radiculopathy
  - S: Skin – Insect Bite, Cellulites
  - Trauma, arthritis


Normal
Plaque
Poor circulation can
cause leg pain

Risk factors:

- A- Alcohol, Age>45
- B – BP, Increased BMI
- C – Cigarette, Cholesterol
- D – Diet, DM
- E – Exercise (Life Style)
- F – Family History
- AF

History

- Acknowledge concern/Open ended question
- Offer pain killer after ruling out allergies
- Pain questions (SIQORA-1)
  - Site? One leg or both legs?
  - Severity?
  - Quality ? What type of pain do you get? cramping
  - Onset? Gradual or sudden? On/off? Any leg pain during night?
  - Progressively getting worse?
  - Radiation?
  - Aggravating and relieving factor? (worse on walking and better on rest)
- Associated symptoms: fever

- DD'S:
  - Any insect bite, trauma to leg?
  - Any tingling, numbness, weakness?
  - Any back pain?
  - Joint pains?
  - Any prolonged sitting or immobilization?
  - Any Calf swelling/tenderness?
  - Any tortuous, swollen veins?
  - Pain worse on walking uphill, climbing stairs/exertion?
- **S**ADMA-H**O**T(Smoked 20 cigarettes a day for more than 20 years)
- Past Medical History/ surgical history?
  - Spinal Compression fracture 5 years back. On regular f/u.
  - Diabetes- well Controlled on regular f/u.
- Family hx of clotting disorder?

PEFE

- General appearance- PICCLED BMI
- Vitals
- CVS, Resp,
- ABD examination
- Leg examination
  - Inspection
    - Shiny Skin, Hair loss?
    - Pallor ?
    - Obvious Ulcers?
    - Swelling/redness/rash?
    - Any insect bite mark?
    - Any trauma signs?
    - Visible varicose veins?

- Palpation
  - Temperature
  - CRT
  - Pulses (Dorsalis Pedis, Posterior Tibial, Popliteal→ absent on right side and diminished on left)
  - Tenderness
- Movement- range of movements restricted?
- Office Test- BSL, Urine dipstick.
- Special Test- Buerger's test, Bruit, SLR

Investigations (L-VANS)

- Basic blood examinations
- DVT and PVD (Doppler USG)
- PVD (ABI)

Diagnosis and ddx

- From your history and physical examination most likely you are suffering from a condition called as “Peripheral Vascular Disease”.
- Draw and explain
- It is an obstruction by a fatty deposits (atherosclerotic plaque)in the vessels of your legs. That’s why you get leg pain on walking as your legs don’t receive enough blood flow to keep up with demand.

- I found some Risk factors in you…(talk about the risk factors that patient has)
  - Increasing AGE
  - HTN
  - Smoking
  - DM
  - Hypercholesteremia
  - Obesity
  - AF
- I was even thinking about DVT but you do not have swelling, tenderness--------- talk about all the ddx

Case

you are a GP and your next patient is 52-year-old female c/o pain in right leg. She is a known case of diabetes, on oral hypoglycemics and Lipitor.

- Task
  - History
  - PEFE
  - Investigation
  - Diagnosis and Differential Diagnosis

Differential Diagnosis

- L-VANS
  - L : Lymphangitis
    Lymphedema
  - V: Vein – DVT, Varicose Veins
  - A: Arteries - PVD
  - N: Nerves - Neuropathic pain, lumbar radiculopathy
  - S: Skin – Insect Bite, Cellulites
  - Trauma, arthritis

History

- Acknowledge concern
- Offer pain killer after ruling out allergies
- Pain questions (SIQORA-1)
  - Site? One leg or both legs?
  - Severity?
  - Quality ? What type of pain do you get?
  - Onset? Gradual or sudden? On/off? Progressively getting worse?
  - Radiation?
  - Aggravating and relieving factor? (worse on walking and better on rest)

- DD'S:
  - Any fever?
  - Any insect bite, trauma to leg?
  - Any tingling, numbness, weakness?
  - Any Calf swelling/tenderness?
  - Any prolonged sitting?
  - Any recent surgery?
  - Any back pain?
  - Any swollen blood tubes?
  - Pain worse on walking uphill, climbing stairs/exertion?
- SADMA-HOT
  - Smoking +
  - Oral hypoglycemics + Lipitor
- Past Medical History
  - Diabetes-
    - Duration?
    - Medication?
    - Any complication?
    - well Controlled on regular f/u.

PEFE

- General appearance- PICCLED BMI
- Vitals
- CVS, Resp,
- ABD examination
- Leg examination
  - Inspection
    - Shiny Skin +
    - Hair loss +
    - Varicose veins?
    - Obvious Ulcers
    - Swelling/redness/rash?
    - Any insect bite mark?
    - Any trauma signs?

- Palpation
  - Temperature
  - CRT
  - Pulses (Dorsalis Pedis, Posterior Tibial ,Popliteal, femoral—all absent)
  - Tenderness
- Movement
- Office Test- BSL, Urine dipstick
- Special Test- Buerger's test, Bruit, SLR

Investigations (L-VANS)

- Basic blood examinations
- DVT (Doppler USG)
- PVD (ABI)

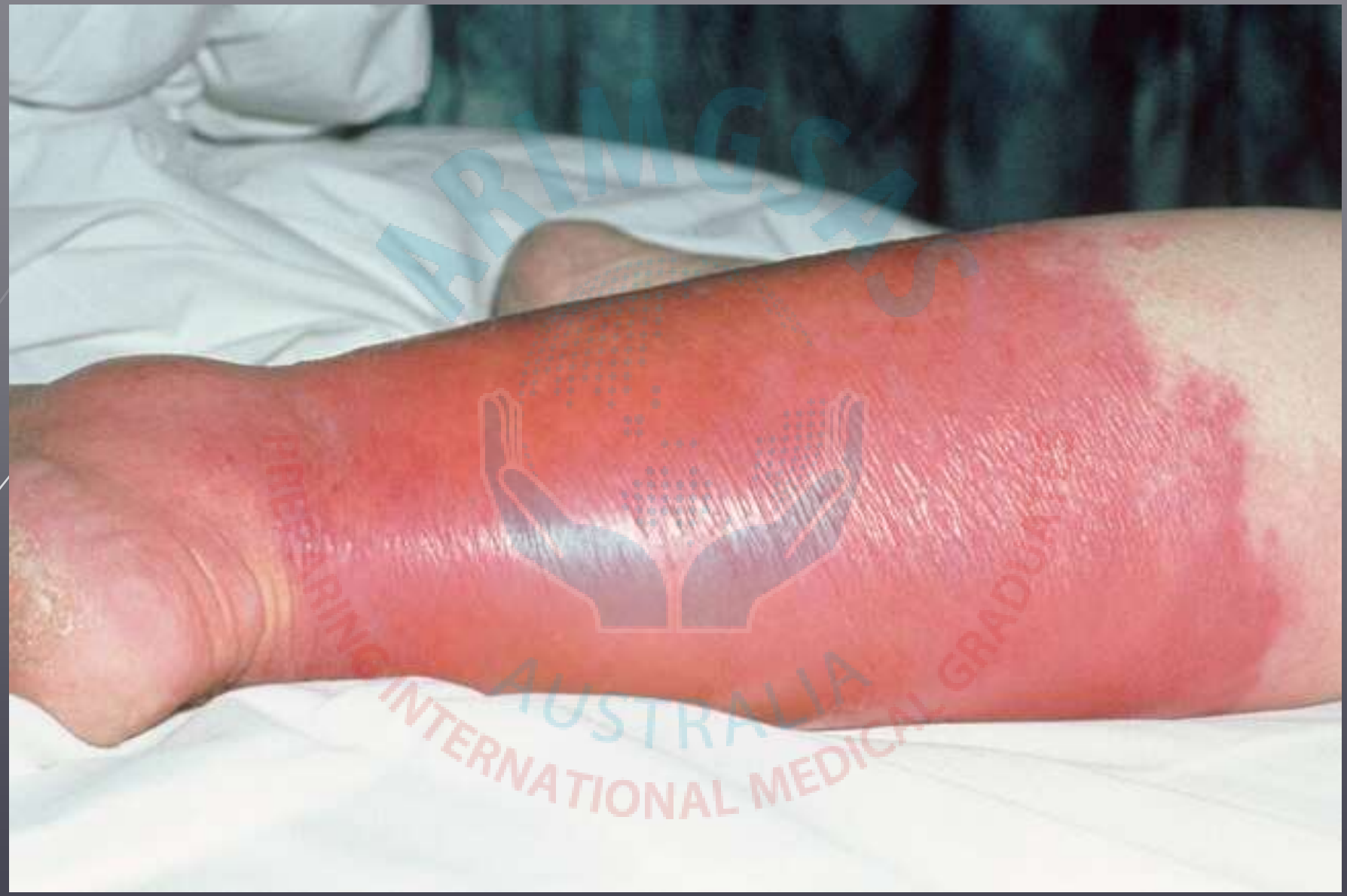
Diagnosis and ddx

- From your history and physical examination most likely you are suffering from a condition called as “Peripheral Vascular Disease”. It is an obstruction by a fatty deposits (atherosclerotic plaque)in the vessels of your legs. That’s why you get leg pain on walking as your legs don’t receive enough blood flow to keep up with demand.
- Risk factors are:
  - Increasing AGE
  - HTN
  - Smoking
  - DM
  - Hypercholesteremia
  - Obesity
- I was even thinking about DVT but you do not have swelling, tenderness--------- talk about all the ddx

Case

you are a GP and your next patient is 52-year-old female c/o pain in right leg and a Rash(picture given).She is a known diabetic.

- Task
  - History
  - PEFE
  - Investigation
  - Diagnosis and Differential Diagnosis



Differential Diagnosis

- L-VANS
  - L : Lymphangitis
    Lymphedema
  - V: Vein - DVT
  - A: Arteries - PVD
  - N: Nerves - Neuropathic pain, lumbar radiculopathy.
  - S: Skin – Insect Bite, Cellulites
  - Trauma, arthritis

History

- Acknowledge concern
- Offer pain killers
- Pain questions (SIQORA-1)
- Rash questions
  - Since when?
  - What where you doing before this rash appeared?
  - Is it getting worse?
  - Any trauma or insect bite?
  - Rash anywhere else?
  - Any recent flu?
  - Any neck stiffness?

- DD'S:
  - Any fever? +, leg swelling?+
  - Any insect bite, trauma to leg?
  - Any Increase in pain walking downhill?
  - Any tingling, numbness, weakness?
  - Any Calf swelling/tenderness?
  - Any recent long travel?
  - Any recent surgery?
  - Any back pain?
  - Pain worse on walking uphill, climbing stairs/exertion?
- 5P's
- SADMA-HOT
  - Smoking +
- Past Medical History/surgical hx
  - Diabetes-
    - Duration?
    - Medication?
    - Any complication?
    - well Controlled on regular f/u.
- Family hx

PEFE

- General appearance- PICCLED BMI
- Vitals- Temp +
- CVS, Resp,
- ABD examination
- Leg examination
  - Inspection
    - Shiny Skin
    - Hair loss
    - Obvious Ulcers
    - Swelling/redness/rash? +
    - Any insect bite mark?
    - Any trauma signs?

- Palpation
  - Temperature
  - CRT
  - Pulses- absent
  - Tenderness
- Movement
- Office Test- BSL, Urine dipstick
- Special Test- Buerger's test, Bruit, SLR

Investigations (L-VANS)

- Full blood examinations
- DVT (Doppler USG)
- PVD (ABI)

Diagnosis and ddx

- From your history and physical examination most likely you are suffering from a condition called as cellulitis. It is a common infection of skin and the tissue underneath. It happens when bacteria (bug) enter through a break in the skin and spread and may cause the symptoms that you are having swelling, redness, pain. You are at risk if you have trauma, DM, PVD.
- As you have been having pain in legs that is worse on walking and gets relieved by rest and on examination pulses in legs are absent so I'm suspecting "Peripheral Vascular Disease" as well. It is an obstruction by a fatty deposits (atherosclerotic plaque)in the vessels of your legs. Risk factors are smoking, diabetes, HTN, high lipids.
- I was even thinking about DVT but…… talk about all the ddx

Case

you are in your GP and your next patient is a 48-year female c/o leg pain that gets relieved by rest. Known hypertensive on beta blockers. Previous surgery for DVT. ABI is 0.7

- Task
  - Explain diagnosis and differentials
  - Further Investigations
  - Management

Diagnosis and ddx

- Summarise
- From your pain pattern and the investigation (ABI 0.7) most likely you are suffering from a condition called as “Peripheral Vascular Disease”. It is an obstruction by a fatty deposits (atherosclerotic plaque)in the vessels of your legs. That’s why you get leg pain on walking as your legs don’t receive enough blood flow to keep up with demand.
- Risk factors are:
  - Increasing AGE
  - HTN
  - Smoking
  - DM
  - Hypercholesteremia
  - Obesity
- I was even thinking about DVT but you do not have swelling, tenderness--------- talk about all the ddx

Further Investigation

- FBE
- Lipid profile
- Color Doppler ultrasound
- Angiography: the gold standard, reserved for proposed intervention

Management

- Stop beta blockers and change to other medication
- General measures (if applicable): control obesity, diabetes, hypertension, hyperlipidaemia, cardiac failure.
- Achieve ideal weight.
- There must be absolutely no smoking.
- Exercise: daily graduated exercise to the level of pain. About 50% will improve with walking; so advise as much walking as possible.
- Try to keep legs warm and dry.
- Maintain optimal foot care (podiatry).
- Drug therapy: aspirin 150 mg daily.
- 4 R's

When to refer to a vascular surgeon

- ‘Unstable’ claudication of recent onset; deteriorating Severe claudication—unable to maintain lifestyle
- Rest pain
- ‘Tissue loss’ in feet (e.g. heel crack, ulcers on or between toes, dry gangrenous patches, infection)
- ***Surgery***
- Reconstructive vascular surgery is indicated for progressive obstruction, intolerable claudication and obstruction above the inguinal ligament:
- Endarterectomy—for localized iliac stenosis
- Bypass graft (iliac or femoral artery to popliteal or anterior or posterior tibial arteries)

Red flags- the 6 P's

- Pain not getting betting with rest/ medication
- Pallor
- Paraesthesia or numbness
- Pulselessness
- Paralysis
- 'Perishing' cold

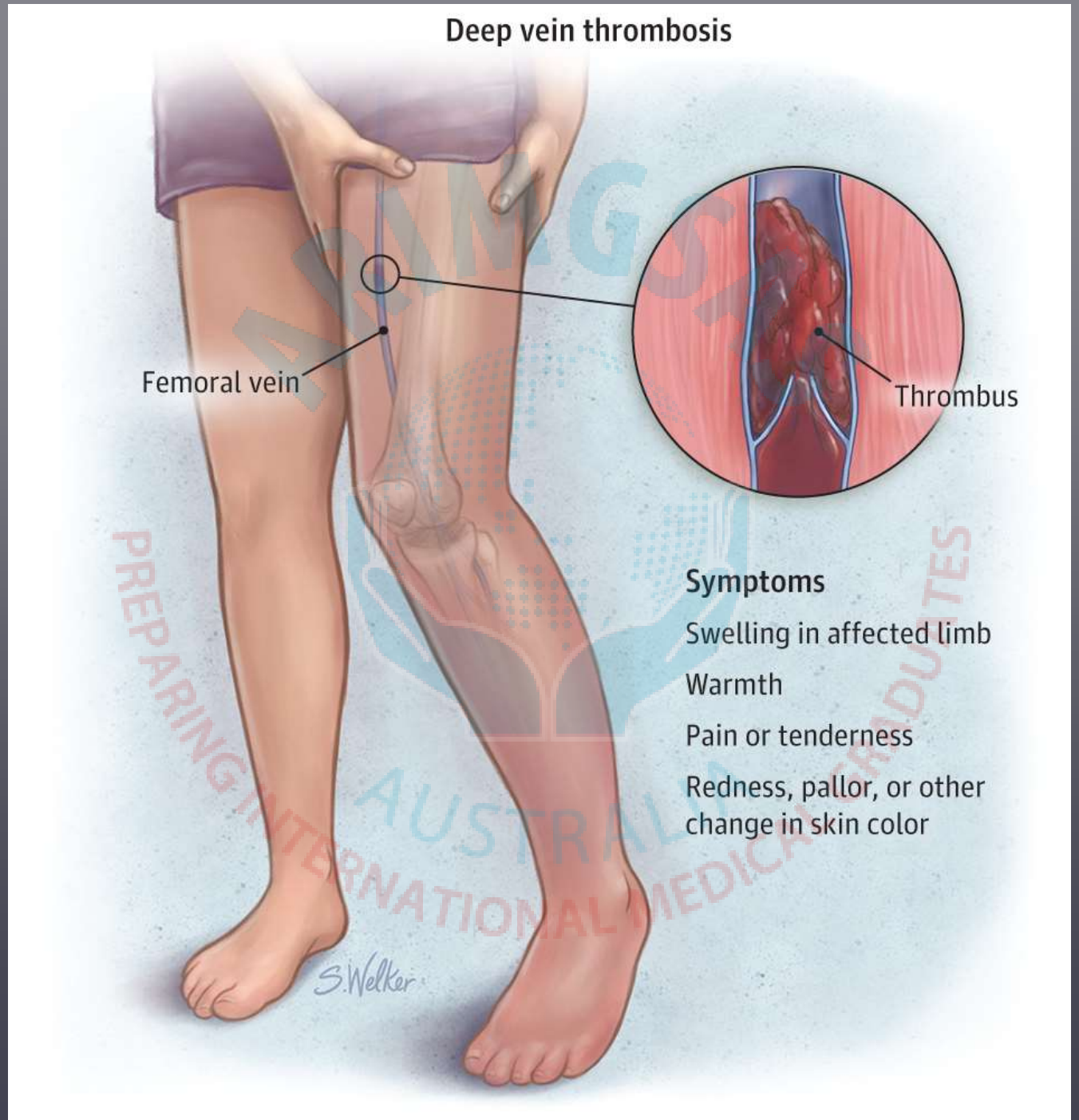
Case

you are HMO ED and your next patient is a 27-year-old jenny c/o right calf pain

- Task
  - History
  - PEFE
  - Investigation
  - Diagnosis and Differential Diagnosis

Differential Diagnosis

- L-VANS
  - L : Lymphangitis
    Lymphedema
  - V: Vein – DVT
  - A: Arteries - PVD
  - N: Nerves - Neuropathic pain, lumbar radiculopathy
  - S: Skin – Insect Bite, Cellulites
  - Trauma, arthritis


Deep vein thrombosis
Femoral vein
Thrombus
Symptoms
Swelling in affected limb
Warmth
Pain or tenderness
Redness, pallor, or other change in skin color
S.Welker

Risk factors of DVT:

- **COST VMPF**
  - C- CONTRACEPTION
  - O-OBESITY,
  - S-SURGERY, SMOKING
  - T-TRAVEL,TRAUMA
  - V-VARICOSE VEINS
  - M-MALIGNANCY
  - P-PREGNANCY, PREVIOUS DVT
  - F-FAMILY HISTORY

History

- Acknowledge concern
- Offer pain killer after ruling out allergies
- Pain questions (SIQORA-1)
  - Site? One leg or both legs?
  - Severity?
  - Quality ? What type of pain do you get?
  - Onset? After a flight from US?
  - How long was the flight? Did you move around?
  - Radiation?
  - Aggravating and relieving factor?

- DD'S:
  - Fever, insect bite, trauma to leg?
  - Any back pain?
  - Any tingling, numbness or weakness?
  - Pain worse on walking uphill, climbing stairs?
  - Calf swelling, tenderness?
  - Any prolonged sitting or immobilization? +
  - Any recent surgery?
  - R/O complication of DVT. Any SOB? Any acute chest pain?
  - Any LOW, LOA, lumps and bumps?
- Period hx- 5p's
  - Period
  - Pill- OCP
  - Partner
  - Pregnancy. LMP?
  - Pap smear
- SADMA-HOT
  - Smoking +
  - Alcohol +
  - Travel +
- Past Medical History
- Family history. Any family or personal history of clotting disorder?

PEFE

- General appearance- PICCLED-BMI
- Vitals
- CVS, Resp,
- ABD examination
- Leg examination
  - Inspection

    Shiny Skin

    Hair loss

    Obvious Ulcers

    Swelling/redness/rash

    Any insect bite mark

- Palpation
  - Temperature
  - CRT
  - Pulses
  - Tenderness
- Movement
- Office Test- BSL, Urine dipstick, UPT
- Special test- Buerger's test, Bruit, SLR

Investigations (L-VANS)

- Full blood examinations
- DVT (Doppler USG –clots present)
- PVD (ABI)

Diagnosis and differentials

- From your history and physical examination you most likely have a condition called as “deep vein thrombosis "and your USG Scan is also consistent with DVT. It is a condition where there is a blood clot formation in deep veins of your legs and can cause swelling, pain and redness .
- In your case I found some risk factors like OCP use, Long travel, and your BMI is also on higher side. If untreated it can lead to a serious condition called as pulmonary Embolism where the blood clot can leave from your veins in lower limbs and travel to the lungs.
- Talk about ddx

Management

- Admit
- Will be seen by surgical registrar
- Further investigation
  - Basic blood investigations
  - CXR
  - Thrombophilia Screen
  - INR
- STOP OCP , Use condoms if needed and consult GP for change of contraception
- Heparin (LMW heparin e.g. enoxaparin or dalteparin)
- Oral anticoagulant (warfarin) for 6 months depending on relative risk

Prevention

In Prolonged travel/immobilisation

- Keep hydrated—ample water.
- Avoid or restrict alcohol and coffee.
- Exercises—3–4 minutes per hour (e.g. walking, calf contraction—e.g. foot pumps, ankle circles, knee lifts)
- Injections LMWH just prior to flying and on arrival for those at high risk. Use a prophylactic dose (e.g. enoxaparin 40 mg or dalteparin 5000 U both SC injections twice daily)

RANDOM CASES:

Gynecomastia

Case

Breast enlargement and sore and he feels embarrassed.

TASK: Take a focused history.

: Ask for PE from examiner.

: Give your Dx. DDx.

: Mx

Ddx:

- Fat deposition
- Old age
- Pituitary adenoma
- Breast carcinoma
- Hyperthyroidism
- Liver failure
- Testicular tumour
- Oestrogen secreting tumours (adrenal carcinoma)
- Medications/Drugs
- --steriods
- --oestrogen
- --marijuana
- --spironolactone
- --amiodarone
- --TCA

History:

- <u>Approach:</u>

Explore the presenting complaint → DDx Q from head to toe → SADMA → Family/Past Medical/Sx Health Hx

- NB: Sensitive case = be extra careful and sympathetic

- <u>Breast enlargement Q:</u>

when first noticed? Both? Gradually increasing or sudden?(over 2 months) Painful?(yes) Noticed any lump? Any skin changes? Any discharge from nipple? Any trauma or previous surgery? Any lumps around the armpit area?

History:

- Ddx Question:

--Pituitary tumour: any headache? Blurring of vision? Milky nipple discharge ?

--Breast cancer extra Q: weight loss? Appetite? Tired?

--Cancer spread Q: back pain? Breathing problems?

--Hyperthyroidism: weather preference? b/b habit?

--Liver failure/CLD: yellow discolouration? Lumps in tummy? Red spots in body?

--Testicular tumour: lump in private area/scrotum/testes

--Medication/Drug: which meds/drugs? How long? And other side effects you've noticed ?

PEFE:

- **General Appearance:** anxious? Comfortable?
- **V/S:** tachycardia in Hyperthyroid
- **BMI:** **31
- **Skin examination:** Pale? Jaundice? Rashes? Injection site?
- **Face:** exophthalmos,lid lag, lid retraction, CN 2,3,4,6
- **Breast examination:** **Glandular tissue present
- **Thyroid exam:** any lump?
- **Chest exam (Resp +Cardio):** spider neavi?
- **Gastrointestinal system:** any distention? CLF = initial phase (liver enlarged), late phase (liver atrophy), bruise?
- **Genitourinary system:** any testicular mass?
- **Office Test:** UD, BSL

Management:

- Empathy
- After taking your history and physical examination, we found.....findings (BMI + Glandular tissue) .....enlargement of breast tissue. Its not uncommon.
- Could be due to number of causes.....ddx in layman terms.....
- But in your case, seems more likely due to Spironolactone, it could also be due to sometimes fat deposition. To confirm my diagnosis and exclude other causes, Ill need to run some tests.
- In the meantime, its good to follow the SNAP guidelines.
- 4R

Fever + Rash + Red Eye

Case

STEM: Patient feeling ill and lethargic for 2 days with sore eyes.

TASK: Take a focused history.

: Ask for PE from examiner.

: Give your Dx. DDx.

: Mx

Ddx:

- **Mosquito borne diseases:** Chikunguniya, Dengue, Zika
- **Reiters** (conjunctivitis + genitourinary s/s + arthritis)
- **Behcets** (uveitis + oral &/or genital ulcers + arthritis)
- **Allergic/Viral/Bacterial Conjunctivitis**
- **Acute Glaucoma** (trigger factor + mid dilated pupil)
- **Ankylosing Spondylitis** (back pain + uveitis)
- **EBV** (hx of Ab)
- **HIV** (hx of unsafe sex, iv drug, etc)

History:

- <u>Approach:</u>

Explore the presenting complaint → DDx Q from head to toe → Relevant History →SADMA → Family/Past Medical/Sx Health Hx

- Sore eyes: what do you mean by that ? Unilateral/bilateral? (both eyes) Any discharge? Any redness? (yes) Any vision problems? Any flashes or light/halo? Any gritty sensation? Any pain (yes behind the eyes) Any dust enter eye? Any new cosmetics/products?

History:

- DDx Q + Assc features:

  Fever? (yes) Rash? (yes) Where (all over the body) Type (raised) Joint pain? (yes, especially on my hands) Vomiting? Weight loss ? Lumps/bumps anywhere on the body ? Appetite change (slightly) Skin colour change? B/b ? Ulcers ?

- Travel history: Yes. Where to? (Brazil) How long did you stay there? Did you travel with anyone else? Also having the same s/s? Vaccination (yes for yellow vaccine, no AB prophylaxis) ? Insect bites ? (yes)

- Sexual history: Stable partner? Same sex practice? Any rashes or discharge per vagina? Get tattoo/piercing/blood donation? I/V drugs?

- SADMA ? (AB history ?) Past Med/Sx history. Family history.

PEFE:

- **General Appearance:** anxious? Comfortable? Wearing glasses?
- **V/S:** Fever (due to infection/inflammation)
- **Skin/Rash examination:** Pale? Jaundice? Bruises ? Rashes- morphology? Blanching/non blanching? Injection site? Bite marks? Scratch marks?
- **Face:** Eyes :(i+p), CN 2,3,4,6 + Fundoscopy. Mouth : ulcers, tonsils.
- **Neck Stiffness**
- **Resp + Cardio system:** URTI?
- **Gastrointestinal system: (i + p + p + a)**
- **Genitourinary system:** any rash/vesicles/discharge
- **Office Test: UD --** proteins, red cell casts, leukocytes

Dx + DDx + Management:

- Empathy
- After taking your history and physical examination, we found given your positive history.....findings.....Its most likely due to a mosquito borne disease. Its quite common among travellers in these countries.
- Could be due to number of causes.....ddx in layman terms.....
- To confirm my diagnosis and exclude other causes, Ill need to run some tests involve blood tests, looking at blood films.
- If positive, probably due to viral cause and treat it symptomatically, unless a complication arises. Bed rest, plenty of fluids, painkillers.
- Medical certificate for bed rest and not work.
- If you partner shows s/s tell him/her to see me or his GP
- 4R

HTN & Alcohol Abuse

Case

HTN pt, lately forgets to take night time medication of Periondopril. Today BP 170/90. He has been counselled before about HTN and its effects. He also has a history to taking alcohol chronically, but reduced it upon counselling, but recently been drinking 4-6 glasses of wine on most days, unemployed. You did cognition test and found he had short term memory loss but memory on childhood events are intact.

TASK:

Take a focused History.

Counsel the patient

History

Approach:

Explore the presenting complaint – HTN and Alcohol

→ Causes of this situation → Any complication of HTN → Alcohol problem + CAGE Q → Past Med/Sx Hx → SADMA + Support Hx

History:

- Ask concerns.
- Why forgetfullness? (stem says long term intact so no need to dig deep)

--money?

--too frequent dosaging

--instructions were not properly given?

--side effect of the medications?

- Ask side effect of HTN/uncontrolled HTN (from head to toe)

--headache?

--blurring of vision?

--chest pain/palpitation?

--shortness of breathe?

--more pillows at night ?

--lumps in tummy (liver prob)

--problems with b/b (renal prob)

--swelling of legs?

--discoluration of legs?

History:

- Alcohol Question

--how many? Which type? How often? any reason why? Binge drink behaviour ?

--aware of safety level?

--CAGE Q

- Occupation history (unemployed)
- Social history: lives alone, no relationships
- Already has help from Centrelink
- SADMA (no other postive hx)
- Family Hx
- Past Med/Sx History

Conselling

- Explain reasons for being forgetful (vascular dementia / alcohol)
- Explain what is HTN.
- Explain the complications of HTN.
- Explain importance of HTN medications.
- Explain his/her hazardous alcohol intake (2 standard drinks on 5 days a week).
- Explain complication of Alcohol.
- Arrange another appointment to talk to more in detail and quitting program.
- Investigations: bloods and imaging.
- Advise close friends or relatives to give you a ring to help remember, or use webster packs or even phone alarms. +4R

Hypoglycemic Attack

Case

Patient was admitted in ED due to a hypoglycemic episode. Her bsl is 1.8 and she has been stablised. She was prescribed metformin and her specialist recently added glicazide. She also had a recent URTI. Today she had a light meal this morning, then went to deliver a parcel as she is a truck driver. She had an attack at the shopping centre and had a medialert bracelet on her wrist.

TASK:

Explain why she lost her consciousness.

Mx plan

Case

Patient was admitted in ED due to a hypoglycemic episode. Her bsl is 1.8 and she has been stablised. She was prescribed metformin and her specialist recently added glicazide. She also had a recent URTI. Today she had a light meal this morning, then went to deliver a parcel as she is a truck driver. She had an attack at the shopping centre and had a medialert bracelet on her wrist.

TASK:

Explain why she lost her consciousness.

Mx plan

Mini History

Approach:

Explore the presenting complaint → Causes of this situation → DDx of Fall

Mini History:

- Ask if feelings alright and ask her to explain what happened?
- First time?
- Tell me more about the infection you had, feeling better now?
- I can see from the notes youve had a change in meds, when? Any side effect?
- Regarding parcel, can they get heavy? Require effort?
- Also you've had a lighter meal, could you explain what that contained?
- Excessive exercise?
- Recent alcohol intake?
- **DDx of Fall Question:**

--weakness? bov? no chest pain/palp? no vomiting/diarrhoea? no warning s/s?

Mx

Blood glucose imbalance due to either recent change of medications, the lighter meal, or even the infection, heavy lifting of parcels

Could be due to.....DDx: Brain, heart, postural hypotension, electrolytes imbalance, so we will do some blood test to rule them out.....

Advise on Hypoglycaemic carry pack (6 jellybeans or even half a glass of juice) then we wait 15 mins if not improve, take another load, if not improve, there is an injection which we can glucagon you can inject then come to hosp immediately.

Specialist will review and she will talk you through further management protocol, which can involve adjusting your medications.

Doctor, can I drive now? Once levels are stable and within 5 mmol..yes you can drive. May sure you check your glucose levels before driving.

If you forget numbers/ levels: GIVE GENERIC ANSWER and Say "ill consult with my senior/specialist and let you know as soon as possible, but most likely you can once you're stabilised" + 4R

Heartburn

Case

Epigastric pain and heart burn in 64 year old.

TASK:

Take a History

PEFE

Give your Dx

Give your Mx plan

Ddx:

- Stomach:

--GORD

--Peptic Ulcer

--Duodenal Ulcer

--Carcinoma

- Oesophagus:

--Oesophagitis

--Barretts oesophagus

--Stricture

--Cancer

- Referred pain from MI
- Injury/Trauma
- Rash - HZ

History:

- <u>Approach:</u>

Pain Q & Mx + Explore the presenting complaint → DDx Q → Past Med/Sx Hx → SADMA + Support Hx

- Pain Q: pain? Med? Allergy?

- Pain : SOCRATES/SORTSARA/LOTSRADIO 1.

Where ? Radiation? Type (on and off)? Nature? (burning)? Last incident? (Had bbq with steak last weekend) Relieve/agg? (Mylanta helped but recently not so much.)

- Associated s/s: reflux (yes) chest pain/sob/palp?

fullness after heavy meal? (yes) Diet (not healthy)

History:

- **DDx Q:**

--Vomit? Bleed?

--spicy food?

-- weight loss? Appetite change? (cancer)

--Hoarseness of voice? (mass/involvment of recurrent l nerve)

--Diffuculty in swallowing food or liquid? (cancer)

--dark tarry stool/bowel motions (peptic ulcer/upper GI bleed)

--lumps or bumps.

- SADMA: Alcohol. NSAIDS (peptic ulcer).
- Trauma
- Rash? (HZ)
- Past Medical/Sx History (yes, Hiatus Hernia, yes abdominal surgery)
- Family History

PEFE:

- **General Appearance:** anxious? Comfortable? Protected posture?
- **V/S**
- **Skin : rashes?**
- **Resp + CVS exam**
- **Gastrointestinal system: (i + p + p + a) + DRE**
- **Genitourinary system**
- **Office Test: UD, BSL, ECG**

Dx + Mx

Dx: **GORD,** Peptic Ulcer, Cancer of Stomach or Oesophagus, Stenosis of Oesophagus, Referred MI (Everything explained in simple terms)

Mx: **5C Approach**

To confirm and exclude we need to Basic bloods, Endoscopy, PPI.

H.Pylori = antibiotics in a Triple Therapy.

SNAP guidelines + GORD LSM

Other screening + 4R

Case

Epigastric pain and heart burn in 64 year old.

TASK:

Take a History

PEFE

Give your Dx

Give your Mx plan

Dx + Mx

Dx: GORD, **Peptic Ulcer**, Cancer of Stomach or Oesophagus, Stenosis of Oesophagus, Referred MI (Everything explained in simple terms)

Mx: **5C Approach**

STOP NSAIDS

To confirm and exclude we need to Basic bloods, Endoscopy, PPI, Colonscopy??

H.Pylori = antibiotics in a Triple Therapy.

SNAP guidelines + Peptic Ulcer LSM

Other screening

Case

Epigastric pain and heart burn in 64 year old.

TASK:

Take a History

PEFE

Give your Dx

Give your Mx plan

Dx + Mx

Dx: GORD, Peptic Ulcer, **Cancer of Stomach** or Oesophagus, Stenosis of Oesophagus, Referred MI (Everything explained in simple terms)

Mx: **5C Approach**

To confirm and exclude we need to Basic bloods, Endoscopy, PPI, Colonscopy

MDT approach: Gastroenterologist + Oncologist + GP

May require Sx

Other screening +4R