بسم الله الرحمن الرحيم

بسم الله وعلي الله توكلنا .....اللهم اجعل عملي هذا في ميزان حسناتي

هذا العمل الذي اضعه بين ايديكم الان هو حصيله عمل اكثر من عام كامل

اضعه بين ايديكم ولا ابتغي من وراء ذلك جزاء ولا شكورا .....

وارجو من الله ان يكون هذا العمل هو النواه او البدايه في طريق رفعه شأن

الاطباء العرب علي مستوي العالم والانكتفي بالنقل او الاقتباس .....

الاصدار الثاني .....نوتس الاون اكزام 2012

Dr.FAISAL GAMAL HEMEDA …. MBCHC/MRCP

في البدايه وقبل اي حاجه حابب اقول لأي حد بيفكر ياخد قرار انه يذاكر للزماله ان اهم خطوه هي انك تحلم وتصدق حلمك ومتسمعش لأي حد يحاول انه يثبط من هممك الفكره كلها انك لو عاوز هتقدر الموضوع مش مستحيل الموضوع عاوز انسان صادق مع نفسه في البدايه .....

هتلاقي ناس هتكتفي بشراء الكتب وبس وناس هتشتري الكتب وتفتحها وناس تانيه هي اللي هتشتري و تذاكر وتحل وناس غيرها هتحل و هتتقدم للامتحان .....

مأسهل عليا وانا لسه طالع من امتحاني امبارح اني اقول انه كان اصعب امتحان في العالم بس مش دي الحقيقه .....الفكره انك تكون داخل الامتحان وانت عامل اللي عليك و الباقي علي ربنا .....

متكونشي مقصر بس .....والمقصر بيبقي عارف نفسه .....

مشوار الزماله ممتع طريق كله تحصيل علم .....

لذلك انصح اي حد بيفكر بأنه كفايه كسل وابدأ .....وانت تقدر وان شاء الله تسطتيع ....

انا بدأت اذاكر للزماله من بدايه امتيازي ولله الحمد امتحنت وانا لسه ف الامتياز وكنت اول امتياز علي مستوي مصر يدخل امتحان زماله بريطانيه..

والحمد لله نجحت ف الامتحان ....

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07 February 2014

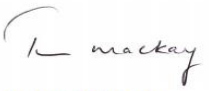
Dear Dr Ibrahim

2014/01 MRCP(UK) Part 1

We are writing on behalf of the three Royal Colleges of Physicians of the United Kingdom to congratulate you on your success in the 2014/01 MRCP(UK) Part 1 Examination.

Name:	Dr Faisal Gamal Abdelghany Hemeda Ibrahim
Code Number:	185737
Exam Number:	6085

Yours sincerely



Dr Tom W Mackay
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Dr Andrew Goddard
Registrar
RCP London

عشان كدا عاوز اقول ان اي حلم ممكن تحققه بالتعب و الجهد .....اللي عاوز يعمل بيدور علي الوسائل واللي مش عاوز بيدور علي المبررات ....

So how can you get benefit from this NOTES ??

First of all these NOTES extremely helpful for those who will work OE …….which is helpful for part 1 I can say …..

you will study the text from whatever source and then you read my notes before answering OE…believe me you will answer it spot diagnosis !!!!

these notes cover most of exam hot topics which is not present in the only mrcp notes book !!!!

read text …..read notes …..answer the chapter mcq..!!

I have make the important info with red font so not to miss and mostly that red font was the answer of the mcq !!!

also something else u might found my onexam notes less perfect than my pastest notes which is true I put my all effort in my pastest notes cuz I am a huge PASTEST FAN !!!

so I recommend to do also pastest question bank and my pastest notes ……..

and if u insist to do onexam only at least pharma do it from pastest ……thanks very much

Index

YOU HAVE TO WORK HARD NOT HARDLLY WORK ……

NO ELEVATOR FOR SUCCESS U HAVE TO TAKE THE STAIRS …

CHEST NOTES

1. **Notes taken from onexam2013**
2. **Exposure to beryllium is seen in the nuclear power, telecommunications, semi-conductor and electronics industries. It results in a similar clinical picture to that of sarcoidosis.**

3. **BTS guidelines suggest that adding in a long-acting beta 2 agonist (LABA) is more appropriate than further increasing inhaled corticosteroids**

3.Eaton-Lambert syndrome is characterised by
Proximal muscle weakness (the cranial nerves and respiratory muscles are usually spared)

Depressed or absent tendon reflexes and
Autonomic features (for example, dry mouth, impotence, etc).
Seventy percent of cases are due to small cell lung cancer

4. **psittacosis=It does spread from person to person**

5. **Lupus pernio is a chronic raised indurated (hardened) lesion of the skin, often purplish in color, and is associated with sarcoid. It is noted to be an adverse prognostic factor**

6. **Felty's syndrome is the association of rheumatoid arthritis and hypersplenism.**

7. **Lofgren's syndrome is the association of erythema nodosum and arthritis.**

8. **If The headache, nausea and vomiting is thought to relate to cerebral oedema, which occurs because of changes in cerebral blood flow at altitude. Optimal treatment is clearly to descend to lower altitude if possible**
9.

This patient has type 2 respiratory failure as evidence by hypoxia $Pa0_2$ of <8.0kPa and hypercapnia $PaCO_2$ >6.0kPa.

This occurs when alveolar ventilation is insufficient to excrete the amount of CO_2 produced by metabolism. This is due to

Reduced ventilatory effort

Failure to overcome increased resistance to ventilation

Failure to compensate for an increase in CO_2 production

or a combination of these factors

The commonest cause is chronic obstructive airway disease, other causes include respiratory muscle weakness, for example, Guillain-Barre syndrome, chest wall deformity, respiratory centre weakness.

The other causes listed here produce type 1 respiratory failure with a mismatch between ventilation and perfusion.

10. The following are adverse prognostic factors in small cell lung cancer:

- **Serum sodium < 132 mmol/l**
- **Weight loss > 10%**
- **WHO performance status > 2**
- **Alkaline phosphatase > 1.5 times upper limit of normal**
- **Lactate dehydrogenase (LDH) > 1.5 times upper limit of normal**
- **Extensive disease (disease occuring outside one hemithorax and ipsilateral supraclavicular fossa nodes).**

11.svco This is an oncological emergency.

Mediastinal radiotherapy leads to symptomatic relief in 90% of patients within two weeks.

12. The treatment of TB mediastinal lymphadenitis is the same as pulmonary TB.

The phenomenon of a 'paradoxical reaction' during treatment for TB has been recognised for many years. This can result in new lesions, or worsening of existing lesions. It is unpredictable in its timing, and can occur anything from a few days to many months after the start of treatment. Duration and severity is highly variable, and it can be difficult to differentiate from treatment failure, drug resistance or a superadded infection. Most cases are recognised in the setting of lymph node or cerebral disease. Enlargement is seen in 30% of cases. Occurences are usually self-limiting.

Corticosteroids are effective in reducing lymph node enlargement and inflammation, and hence will help the stridor and breathlessness.

13. Community-acquired *Klebsiella* pneumonia is a disease of debilitated middle-aged and older men with alcoholism. Mortality rates are as high as 50% regardless of treatment.

***Klebsiella* pneumonia characteristically affects one of the upper lobes of the lung, although infection of the lower lobes is not uncommon. There is an increased tendency toward abscess formation.**

Aspiration pneumonia typically affects in right lower lobe in persons with impaired swallowing.

Legionnaires' disease is associated with contaminated air conditioning and water delivery systems.

***Mycoplasma pneumoniae* infections have an insidious onset with malaise, myalgia, sore throat and headache. Cough is characteristically dry.**

Chest x ray (CXR) changes are usually patchy and involve the lower or middle lobes.

14. Constipation even after the initial few days of life during which meconium ileus occurs is common in patients with cystic fibrosis. It usually responds to an increase in fluids coupled with

adequate soluble fibre in the diet and pancreatic enzyme supplementation.

Pancreatic endocrine, as well as exocrine, failure occurs in patients with cystic fibrosis.

Diabetes mellitus occurs in >65% of patients by age 25 and this is independent of weight gain.

Females with CF have a relatively minor reduction in their fertility, and many have now gone on to have successful pregnancies.

Median survival has increased significantly over the past 10 years, and is now around 37 years.

Pancreatic enzyme supplements are required to help patients maintain weight.

15. Accordingly to the latest British Thoracic Society (BTS) guidelines for pulmonary embolism, use of the oral contraceptive pill is classed as a minor risk factor with a relative risk of 2-4.

Other minor risk factors include

- **Occult malignancy**
- **Long distance travel**
- **Hypertension**
- **Congestive cardiac failure and**
- **Thrombotic disorder.**

Lower limb problems including a fracture or varicose veins are classed as a major risk factor (relative risk 5-20) in the development of VTE.

Other major risk factors include

- **Post-operative intensive care**
- **Hospitalisation**
- **Abdominal/pelvic or advanced malignancy**
- **Previous VTE and**
- **Pregnancy**

16. The appearance of multiple petechiae in the distribution of the axilla or upper body is characteristic of a fat embolism.

17. The clinical features of fat emboli are predominately:

- **Pulmonary (shortness of breath, hypoxia)**
- **Neurological (confusion and agitation)**
- **Dermatological (petechiae) and**
- **Haematological (thrombocytopenia, anaemia).**

The petechial rash is pathognomonic of this syndrome, but only occurs in 30-50% of cases.

18. Pentalaminar X bodies (Birbeck granules) found on BAL are considered diagnostic of pulmonary histiocytosis X and so would not be expected with sarcoidosis.

19. Spontaneous rupture of bullae or after minimal trauma causes primary pneumothorax in the young.

Smoking cessation should be advised.

20. It is important for patients who had pneumonia and had a consolidation on chest x ray to have a follow up chest x ray to ensure complete resolution. This is to exclude any underlying cause especially malignancy.

21. T2 = Tumour with any of the following features of size or extent:

- **Greater than 3 cm in greatest dimension**
- **Involves main bronchus**
- **Greater than 2 cm distal to the carina**
- **Invades the visceral pleura.**
- **Associated with atelectasis or obstructive pneumonitis that extends to the hilar region but does not involve the entire lung.**

N1 = Metastases to ipsilateral peribronchial and/or ipsilateral hilar lymph nodes and intrapulmonary nodes involved by direct extension of the primary tumour.

M0 = No distant metastases.

22. Only primary pneumothoraces (less than 2 cm) which are not associated with dyspnoea should be managed with discharge and instructions to return if they become dyspnoeic.

23. Membranous GN is associated with:

- **Malignancy**
- **Elderly patients, male more than female**
- **Medications: penicillamine, GOLD, captopril, and heavy metals: mercury and cadmium**
- **Basement membrane thickening**
- **Rheumatoid arthritis**
- **Autoimmune disease: systemic lupus erythematosus (SLE), thyroid**
- **Nephrotic syndrome is the main presentation**
- **Hepatitis B**
- **Odd infections - like syphilis, leprosy, HIV, schistosomiasis, malaria**
- **Immune complex deposition with IgG and C3**
- **Sickle cell disease.**

24. Carpal spasm is found in association with hyperventilation due to the respiratory alkalosis which results in a reduction in ionised calcium concentration.

25. The presence of AFB yet absence of TB suggests an atypical AFB such as *M. avium*

26. In farmer's lung precipitins to *M. faeni* or *Thermoactinomyces vulgaris* are found in 75-100% of cases during an acute episode.

27. Topotecan is an inhibitor of topoisomerase-1, an enzyme which is involved in DNA replication.

The major study of topotecan in small cell lung cancer used the oral formulation in patients who had relapsed and for whom re-treatment with IV chemotherapy was not considered appropriate. For this reason NICE guidance recommends it should only be used in patients who have relapsed and cannot be treated with the CAV regime.

Option A does not conform with the current NICE guidance and is therefore inappropriate.

The majority of the IV studies of topotecan were in cervical cancer, so that whilst the IV formulation is an option in cervical cancer, it is not in small cell lung cancer.

Options D and E are inappropriate as topotecan is recommended for a subset of patients with small cell lung cancer.

28. An azygous lobe is seen in about 0.5% of routine chest x rays and is a normal variant.

It is seen as a 'reverse comma sign' behind the medial end of the right clavicle.

29. High dose oxygen (40-60%) should be used in severe asthma attack, together with steroids and nebulised bronchodilators

30. Video assisted thoracoscopic surgery is indicated in:

- **Second ipsilateral pneumothorax**
- **Bilateral spontaneous pneumothorax**
- **Spontaneous haemothorax**
- **Persistent air leak (more than five to seven days of drainage)**
- **Certain occupations, for example, pilots or divers.**

Chemical pleurodesis is used in older patients with recurrent pneumothorax, where surgery would be high risk. Failure rates can be 10-20%.

31. Blood gases should be performed in a stable state, which should be at least four weeks after an exacerbation of the disease.

32. type I hypersensitivity and is caused by degranulation of mast cells and release of histamine, prostaglandin D_2 and leukotriene C_4 and D_4.

33. A 15-year-old boy presented with wheezing when playing football and nocturnal cough.

Which is the best test to confirm the underlying condition? Serial peak expiratory flow rate measurements

34. This patient has hepatopulmonary syndrome. Platypnoea and orthodeoxia are typical of this syndrome.

A greater than 5% desaturation on sitting up is very suggestive of this condition which complicates liver cirrhosis and is characterised by pulmonary arteriovenous malformations.

Contrast echo is the diagnostic tool of choice.

Visualisation of late-appearing bubbles in the left atrium following the injection of agitated saline is strongly suggestive of a pulmonary arteriovenous shunt.

35. Given this woman's obesity, slowly progressive shortness of breath, absence of chest signs, and presence of peripheral oedema and varicose veins, chronic pulmonary emboli are the most likely possibility. As such warfarinisation is the optimal long term strategy to reduce the risk of further clots. She should also be encouraged to lose a significant amount of weight.

36. Unfortunately responsiveness to corticosteroids in cryptogenic fibrosing alveolitis although up to 20% may show some objective response with respect to stabilisation of lung function.

Whilst only 20% of patients may be steroid responsive, other treatments for alveolitis include azathioprine and cyclophosphamide.

Other options under clinical trials include interferon-gamma 1beta and bosentan

37. the following pieces of information is listed on the standardised oxygen alert cards=The oxygen concentration via venturi mask to be used

38. The diagnosis of phrenic nerve palsy is suspected when on the chest radiograph the diaphragmatic leaflet is elevated and is confirmed fluoroscopically by observing paradoxical diaphragmatic motion on sniff and cough.

In patients with normal lungs unilateral paralysis is usually asymptomatic and rarely requires treatment.

39. In the normal lung=The V:Q ratio is greater in apical than basal segments of the lung when upright and at rest

40. The risk of mesothelioma is not affected by smoking but smoking and asbestos exposure greatly increase the risk of lung cancer.

It is pleural plaques which do not become apparent until 20 years or more after exposure.

Pleural effusions may result from acute asbestos pleurisy.

Pleural plaques are not precursors of malignant change, but they reflect previous asbestos exposure.

Basal fibrotic changes suggest the presence of asbestosis as the fibres are fibrogenic.

41. *Mycobacterium avium* (also known as *Mycobacterium avium complex* [MAC], or *Mycobacterium avium intracellulare* [MAI]) causes disseminated infection in patients with advanced HIV, typically when the CD4 count is less than 50 cells/mm^3.

This is a disseminated infection that usually causes symptoms of fatigue, weight loss and fevers. Bone marrow infiltration is typical and patients are often anaemic and/or pancytopaenic. The diagnosis is best made from bone marrow aspiration and culture. It may also be detected in blood cultures.

42. This patient has a respiratory alkalosis with type 1 respiratory failure as evidenced by low pO_2 and low pCO_2.

Chronic venous thromboembolism would be the most likely explanation for this man's presentation.

DERMA NOTES

د.فيصل جمال عبدالغني حميده

Dr.faisal gamal abdelghany hemeda

Admin of MRCP part1, 2 written and PACES الزمالة البريطانية لامراض الباطنة

https://www.facebook.com/groups/mrcpuk/

I RECOMMEND TO READ IT BEFORE DOING ONEXAM !!!!

BELIVEME ME IT WILL MAKE A DIFFERENCE ….read it after studying the text and before answering the mcqeos !!!!!

1.Trichotillomania is more commonly seen in children and adolescents compared to adults. It is regarded as a primary psychiatric disorder and results from repetitive hair manipulation by the patient's own hands. It results in a patchy non-scarring alopecia that often has a bizarre distribution. Small, broken hairs of varying lengths may be seen within the patches of alopecia.

2.The stratum corneum is the last layer and provides a mechanical barrier to the skin and therefore determines the mechanical functions of the skin. The hands and feet have thick stratum corneum as compared to the lips and eyelids. The thicker the stratum corneum is the more protection there is for the skin.

3.The commonest form of urticaria is idiopathic and there is no identifiable trigger.

4. Molluscum contagiosum is caused by a deoxyribonucleic acid (DNA) pox virus.

The lesions are small, skin coloured papules with central umbilication. There is little surrounding inflammation and they may be spread following scratching to other sites.

5. Which of the following parameters needs to be regularly monitored while she is on treatment with ciclosporin?

(Please select 1 option)

=Blood pressure

6. Eye toxicity is one of the most serious side effects of treatment with antimalarials and requires regular screening. The cornea and macula may be affected by antimalarial medications.

7. Kerion presents with an inflammatory swelling on the scalp or the glabrous skin with numerous pustules in response to zoophilic fungi resulting in severe scarring alopecia in untreated cases.

8. Dermatophyte fungal infection of the nail presents with Dystrophy of the affected nails. A moth eaten appearance as evident in the middle finger is characteristic. Commonly the affected individuals have evidence of dermatophytosis elsewhere, such as Tinea pedis, Tinea corporis, Tinea cruris (as in this case).

9. Hansen's disease, more commonly known as leprosy, is the correct option here. It classically produces reddish patches or

hypopigmented areas of skin, with reduced sensation. These are required for the disease to be diagnosed.

10. The patient is likely to have neurofibromatosis (NF1).

To be given the diagnosis of NF1, an individual must have at least two of the following features. Some people with NF1 have only two, while others can have several of these features:

Six or more café-au-lait spots, or coffee-coloured birthmarks, each measuring over an inch in adults (1/4 inch in children)

Two or more neurofibromas or a plexiform neurofibroma

Freckles under the arm or in the groin region

A tumour of the nerve to the eye called an optic glioma

Two or more spots on the iris of the eye called Lisch nodules

A problem of one of the bones such as bowing of a leg, with or without a fracture

A parent, brother, sister, or child with NF1.

11. Erythema nodosum is characterised by painful, indurated, shiny, red, hot, elevated nodules 1-3 cm diameter particularly on

the shins. There may be associated fever, malaise, and arthralgia ± hilar adenopathy.

Over a period of days they become violaceous, then dull purple, then fade like a large bruise without residual ulceration or scar. There may be crops over three to six weeks.

They are uncommon under the age of 6, and are commoner in females than males.

Causes include:

Infections

Bacteria: *Streptococci*, leptospirosis, cat-scratch disease, psittacosis, *Yersinia.*

Viruses: EBV.

Other

TB, tularaemia, histoplasmosis, coccidioidomycosis.

Drugs

Sulphonamides, oral contraceptive pill.

Systemic diseases

SLE, vasculitis, regional enteritis, ulcerative colitis, Behçet syndrome, sarcoidosis.

12. This patient has discoid lupus erythematosus. A skin biopsy will reveal interface dermatitis, characterised by basal vacuolar change, necrotic keratinocytes and pigment incontinence. This reaction represents damage to the epidermis from the inflammation.

13. The suggested diagnosis is vitiligo which is associated with numerous autoimmune conditions including, in order of frequency:

Autoimmune hypothyroidism

Pernicious anaemia

Alopecia areata

Addison's disease.

It is associated with both type 1 and 2 autoimmune polyendocrine syndromes but these are much rarer than the former diagnoses.

14. Tinea capitis is a dermatophyte infection of the scalp. There are a number of causative organsisms, but currently in the UK and USA is most often caused by *Trichophyton tonsurans*, and occasionally by *Microsporum canis*. It is commonest in areas of socio-economic deprivation.

15. Diuretics may reduce oedema but have not been demonstrated per se to reduce healing time.

Gravitational ulcers are not usually painful.

If there are no obvious features of surrounding cellulitis, antibiotic therapy is usually unnecessary and has not been shown to improve healing in superficial infection which is common in ulceration.

16.c yclosporin is a well used drug in the treatment of atopic dermatitis (AD). It is usually at doses of 2-5 mg/kg.

17. Option B: Ecthyma usually follows trivial trauma such as a scratch or insect bite on the legs and develops into a small pustular lesion on an erythematous base, with an adherent hard crust of dried exudate below which ulceration exists.

Option C: Folliculitis presents with erythematous painful follicular pustules.

Option D: Superficial infection of the skin caused by *Staphylococcus aureus* and *Streptococcus pyogenes* is common in children. Impetigo classically involves the epidermis and presents with honey coloured crusts. It is contagious and spreads among contacts as well as by autoinoculation.

Option E: Sycosis barbae presents clinically with inflammatory folliculo-centric pustules commonly on the glabrous areas of the skin.

18. Dermatophytosis is common in athletes. It usually presents with annular scaly plaques with active peripheral margins and central clearing resulting in increasing size of the lesions. The lesions are typically itchy and increase in number over a period of time. The affliction on legs and thighs is termed tinea corporis. It is occupational dermatoses in athletes and may be recurrent in them if due precautions are not taken.

19. The mnemonic of ABCDE regarding characteristics of a melanoma are as follows:

A - Asymmetry - one half of the lesion does not match the other half

B - Border irregularity

C - Colour variegation - pigmentation is not uniform

D - Diameter- a diameter 7 mm warrants investigation although changes in size are also important

E - Evolution - evolving size or changes in characteristics such as nodules.

20. Urticaria is a common condition and usually responds very well to systemic antihistamines which are the correct first line treatment.

Oral steroids can be given for severe cases but only as a last resort.

Topical steroids/topical antihistamines have no effect.

21. A 26-year-old man is noted to have cyanosis of the lower limbs and clubbing of the toes but not the fingers.

Which of the following statements is true?

=He has Eisenmenger's syndrome

22. G6PD deficiency is an absolute contraindication to treatment with dapsone as it can lead to severe haemolytic anaemia. This is probably due to the N-hydroxy metabolites of dapsone, which are direct haemolytic agents. When allowed to build up to large

enough amonths, they induce premature sequestration of the red cell in the spleen.

23. infantile haemangiomas are common vascular tumours that present in early infancy. They continue to enlarge and deepen in colour for the first few months of life before slowly involuting after six to 12 months. They are more common in premature infants.

24. Pompholyx or dyshidrotic eczema presents bilaterally on the hands and feet as itchy, erythematous blisters that resemble 'sago seeds'. It is commonly seen in young patients with a history of atopy and is more common in individuals who wear closed shoes or boots for long periods.

25. Work Smart Session - MRCP Part 1

Question: 6 of 20

Time taken: 06:36

A young male patient presented with sharply circumscribed hyperpigmented skin lesions over the back.

What is the most likely diagnosis?

(Please select 1 option)

- **A. Allergic contact dermatitis**
- **B. Erythema multiforme**
- **C. Fixed drug eruption** **Correct**
- **D. Folliculitis**
- **E. Lichen planus**

Fixed drug eruption may present with sharply circumscribed pigmented macules, erythematous lesions or bullous lesions with a classical history of recurrence at the same site following the ingestion of the offending drug.

26. Option B (Correct answer): Dermatitis artefacta typically presents in a healthy individual with unexplained skin lesions

which may be bizarre, sharply marginated geometric or linear tracks. Underlying psychiatric illness or a history of childhood neglect or abuse may be present.

27. Potential causes of erythema multiforme include:

1. Infections

Viruses: herpes simplex 1 and 2, hepatitis B, Epstein-Barr virus (EBV), enteroviruses

Small agents: *Mycoplasma pneumoniae*

Bacteria: Group A Streptococcus, eosina

Other: *Mycobacterium tuberculosis*, histoplasma, coccidioides.

2. Neoplasia

Leukaemia

Lymphoma.

3. Antibiotics

Penicillins, sulphonamides, isoniazid, tetracycline.

4. Anticonvulsants

Phenytoin, phenobarbitone, carbamazepine.

5. Other

Aspirin

Radiation therapy

Etoposide

NSAIDs

Sunlight

Pregnancy.

28. Increased skin fragility is seen in a number of disorders and is used as a clinical test in bullous disorders (Nikolsky's sign).

Other causes include:

Pemphigus vulgaris

Porphyria cutanea tarda

Drug reactions (especially pseudoporphyria).

29. This patient has keratosis pilaris, characterised by tiny, hyperkeratotic, follicular papules, most commonly affecting the upper arms and thighs. It is commonly seen in patients with atopic dermatitis.

30. Pseudomonas intertrigo typically presents with a bluish to greenish pigmentation in the affected areas. In the typical 'immersion foot' the affected area is sodden and macerated with inhibition of the Gram positive bacteria and dermatophytes. Secondary invasion after pseuodomal infection is possible with Candida.

31. En coup de sabre, a variant of scleroedema is characterised by a linear, atrophic depression affecting the frontoparietal aspect of the face and scalp, suggestive of a stroke from a sword, as shown in the image. Such lesions may extend into the underlying tissues. Scalp involvement results in scarring alopecia. And it need no active management .

32. Pitted keratolysis is a common infection of the thickly keratinised areas of the plantar soles by *Micrococcus sedantarius*.

It presents with sharply defined pits in the thick skin of the plantar surface of feet in areas which stay in contact with footwear in young adults. It is usually associated with pedal hyperhidrosis which promotes maceration and hence facilitates bacterial penetration. The lesions are usually non-tender.

Plantar warts are usually painful, however they may present as a mosaic collection which may be non-tender and tinea pedis presents with itchy plaques classically over the instep of the soles in an asymmetric fashion.

33. This woman has primary hyperhidrosis which can be quite psychologically disabling.

In this case the most appropriate treatment would be botulinum toxin injection to each axilla. This treatment is licensed for use and would be the preferred treatment before aluminium salts, as antiperspirants have failed.

34. Livedo reticularis is due to dilation of capillary blood vessels and stagnation of blood within these vessels producing a mottled discolouration of the skin.

It is described as being reticular (net-like) cyanotic cutaneous discolouration surrounding pale central areas. It occurs mostly on the legs, arms and trunk and is more pronounced in cold weather.

Mostly it is idiopathic, or secondary to

Malignancy

Vasculitis

SLE

Cancer and

Cholesterol embolisation

35. Certain supplements are important in wound healing particularly zinc, vitamin C and arginine.

Zinc is a component of many of the enzymes responsible for wound healing.

36. Infliximab is associated with tuberculosis by reactivation of latent disease. Thus it is advised that patients who are to be treated with infliximab are tuberculin tested and if required receive chest radiography.

37. In hypersensitive patients, aspirin can cause:

Angioedema

Bronchospasm

Urticaria (skin rash

38. Eczema herpeticum is the result of primary infection of eczematous skin with *Herpes simplex* virus (HSV). The severity varies from mild to fatal.

There is usually an abrupt onset with crops appearing over seven to nine days. These may become coalesced. Typically, the child has a high fever for seven days, and recurrent attacks can occur.

Death can result from physiological disturbances (loss of fluid electrolytes and protein through the skin) or dissemination of the virus to brain and other organs or from secondary bacterial sepsis.

39. Porphyria cutanea tarda (PCT) is a term that encompasses a group of related disorders, all of which arise from deficient activity of the haeme-synthetic enzyme uroporphyrinogen decarboxylase (URO-D) in the liver.

The porphyrins produced in PCT are photoactive molecules that absorb light energy strongly in the visible violet spectrum. Photoexcited porphyrins in the skin mediate oxidative damage to biomolecular targets, causing cutaneous photosensitivity reactions.

The most common presenting sign of PCT is fragility of sunexposed skin after mechanical trauma, leading to erosions and bullae, worst on dorsal hands, forearms and face.

40.

Work Smart Session - MRCP Part 1

Question: 20 of 20

Time taken: 22:00

A 23-year-old obese female with known tuberculosis presents with ulcerating nodules on the back of her legs.

Which of the following is the most likely diagnosis?

(Please select 1 option)

- **Erythema induratum (EI)** **This is the correct answer**
- **Erythema marginatum**

- Erythema nodosum
- Lupus pernio
- Lupus vulgaris Incorrect answer selected

EI is a form of panniculitis characterised by chronic, recurrent, tender, subcutaneous, and sometimes ulcerated nodules on the lower legs that may also appear elsewhere.

Females are more frequently affected, with a female:male ratio of 7:1 and it is more frequent in younger females.

It is found in association with tuberculosis.

41. his patient has drug reaction with eosinophilia and systemic symptoms or DRESS syndrome

It is a severe idiosyncratic drug reaction, characterised by a generalised erythematous rash often associated with facial oedema, involvement of internal organs (liver dysfunction), haematologic abnormalities (eosinophilia) and systemic illness (fever). It is treated with high dose oral corticosteroids for several months.

42. This patient has Sturge-Weber syndrome which presents with a facial port wine stain of the V1 +/- V2 or V3 segments.

Other abnormalities include epilepsy, developmental delay and glaucoma.

43. Option A: Aortic coarctation is seen in PHACE syndrome which presents with segmental facial haemangioma, not a port wine stain.

Option C: Liver haemangiomas are seen in some patients with multiple cutaneous haemangiomas.

Option D: Posterior fossa abnormality, for example, Dandy-Walker malformation, is seen in patients with PHACE syndrome.

Option E: Renal artery stenosis is seen in neurofibromatosis.

44. Erythema multiforme classically presents as discrete vesicular or bullous lesions surrounded by a pale area and a ring of erythema. However all three zones may not always be evident. The eruption commonly follows the ingestion of the offending drug such as those belonging to the sulfa group.

45. Mycetoma foot caused by *Madurella mycetomatis* follows traumatic inoculation of the fungus mostly on the foot and the lower leg.

The earliest stage is a firm, painless nodule but, with time, papules, pustules which break down to form draining sinuses that appear on the skin surface following which the affected area becomes hard and swollen usually without significant pain extension to underlying bones and joints gives rise to periostitis, osteomyelitis and arthritis.

Advanced cases may present with destruction of bone within an infected area giving rise to gross deformities. There are usually multiple sinus tracts draining pus and granules. Lymph node involvement is rare.

46. Pitted keratolysis is a common infection of the thickly keratinised areas of the plantar soles by *Micrococcus sedantarius*.

It presents with sharply defined pits in the thick skin of the plantar surface of feet in areas which stay in contact with footwear in young adults. It is usually associated with pedal hyperhidrosis which promotes maceration and hence facilitates bacterial penetration. The lesions are usually non-tender.

47. regarding eczema herpeticum=Is typically associated with a high fever for over a week.

48. porphyria cutanea tarda=Skin fragility and blistering affecting the hands, face and scalp.

49. This patient has Sturge-Weber syndrome which presents with a facial port wine stain of the V1 +/- V2 or V3 segments. Other abnormalities include epilepsy, developmental delay and glaucoma.

50. true regarding diabetic foot ulceration= Callus formation at pressure areas is an important predictor of ulceration.

51. cutaneous anthrax= Lesions are associated with marked oedema.

Done by faisal gamal hemeda

Ain shams university

GIT AND HEPATOLOGY NOTES

1. Acanthosis nigricans is associated with gastric adenocarcinoma.

Ichthyosis is associated with lymphoma.

Glucagonoma is associated with necrolytic migratory erythema.

Malignancy-associated vasculitis is associated with haematological rather than solid malignancies.[10]

2. Alpha-1-antitrypsin (A1AT) deficiency is an autosomal co-dominant disorder - both alleles contribute to the phenotype. The most common allele is M (normal), whilst there are over 100 abnormal alleles (leading to decreased A1AT levels) the most common are Z and S. Individuals with a single normal allele may have reduced levels of A1AT but still produce sufficient normal protein to prevent development of a disease phenotype, this is why some texts will refer to the condition as autosomal recessive. In the disease state there is impaired cellular transport of alpha-1-antitrypsin leading to accumulation within the liver and hepatic injury. (1)

Cowden's disease is an autosomal disorder resulting in multiple hamartomas of skin and mucous membranes.

Familial adenomatous polyposis is the commonest adenomatous polyposis syndrome demonstrating autosomal dominant inheritance.

Hereditary haemorrhagic telangiectasia (Osler-Weber-Rendu syndrome) demonstrates autosomal dominant inheritance and is characterised by telangiectasia affecting the skin and mucous membranes; severe gastrointestinal haemorrhage may occur.

Peutz-Jeghers syndrome demonstrates autosomal dominant inheritance. There is characteristic mucocutaneous pigmentation; polyps can occur anywhere in the gastrointestinal tract but are commonly in the small bowel.[2]

3. Unconjugated bilirubin is conjugated to glucuronic acid in the hepatocyte.

Conjugated bilirubin passes into the enterohepatic circulation and the bilirubin which evades this system is metabolised by bacteria, primarily in the large intestine, to urobilinogen, then stercobilinogen and eventually oxidised to stercobilin.

Stercobilin gives faeces its brown colour.

4. A combination of jaundice, alcoholic hepatitis, hyperlipidaemia, and haemolysis is known as Zieve's syndrome.

There is no specific treatment for Zieve's syndrome, but supportive therapy is indicated which includes:

- **Correction of clotting abnormalities**
- **Treatment of haemolysis**
- **Treating alcohol withdrawal**
- **Preventing further alcohol intake and**
- **Adequate nutrition.**

The spherocytosis is the result of the haemolysis.

Pancreatitis is a possible differential diagnosis here, but in the first ins

5. Scrombotoxin food poisoning is caused by the ingestion of foods that contain high levels of histamine and possibly other vasoactive amines and compounds.

Histamine and other amines are formed by the growth of certain bacteria and the subsequent action of their decarboxylase enzymes on histidine and other amino acids in food, by spoilage of foods such as fishery products, particularly tuna or mahi mahi.

Incubation period is 10-60 minutes.

6. Cholestyramine is an anion exchange resin, and will interfere with the absorption of fat-soluble vitamins.

Thus vitamin D absorption will be reduced, making treatment with this drug less effective when given along with cholestyramine.

Cholestyramine may enhance or reduce the anticoagulant effect of warfarin (see BNF).

7. The combination of:

- **Bloody diarrhoea**
- **Haemolytic anaemia**
- **Thrombocytopenia but normal clotting and**
- **Renal impairment**

suggests haemolytic-uraemic syndrome.

This is associated with *E coli* 0157 toxin most commonly.

GYNA AND OBS

1.Hypoactive sexual desire disorder is well recognised in post-menopausal females as well as in patients following ovarian failure.

This may not improve despite adequate oestrogen replacement therapy as in this case and testosterone patches have been demonstrated to improve desire, activity and reduce distress

Progestagens are not required in hysterectomised subjects and may cause a deterioration in symptoms.

2. his is likely to be heparin-induced thrombocytopenia (HIT).

Long term LMWH treatment has been associated with low platelet counts and this is the test which is likely to provide you with the most information.

Clexane may cause hyperkalaemia, but this is unlikely to cause bruising.

Albumin levels may increase in pregnancy but serum albumin may be low due to haemodilution.

Activated partial thromboplastin time (APTT) is not useful in monitoring LMWH activity, although APTT may be prolonged in high dose Clexane treatment.

Factor Xa levels can be used to monitor efficacy of treatment but the suggestion of bruising here points more to HIT for which Xa levels would not be a useful guide.

3. Tetracycline should be avoided in breast-feeding mothers because of staining of the infant's teeth.

Other drugs to be avoided include amiodarone, lithium, chloramphenicol and vitamin A derivatives.

4. Leflunomide reduces sperm count.

5. A 51-year-old lady enquires about taking hormone replacement therapy (HRT).

Which of the following is the most compelling indication for taking HRT?

(Please select 1 option)

○ **Control of flushing** **This is the correct answer**

The indications for HRT have been a matter of great debate over recent years.

Relieving the symptoms of menopause is the most compelling indication.

6.

Typhoid fever is best treated with quinolones, chloramphenicol or cotrimoxazole.

However, with breast feeding chloramphenicol is relatively contraindicated as are quinolones due to potential risk even if small.

Also cotrimoxazole is safe in breast feeding except with infants less than 2 months due to possible risk of increased bilirubin.

In pregnancy or children the drug of choice is parenteral ceftriaxone.

7. Polycystic ovarian syndrome is recognised to be a condition associated with increased insulin resistance and metformin is effective through improvements in insulin sensitivity resulting in ovulation and improvements in hormonal perturbations.

It has been shown to increase rates of conception but has no appreciable effect on weight loss.

8. RCOG guidance is clear that when primary herpes infection occurs within six weeks of expected delivery, then caesarean delivery is the recommended course of action.

Additionally, IV aciclovir cover for mother and infant during the peri-partum period is recommended if a vaginal delivery should occur. If vaginal delivery occurs in the absence of aciclovir cover, an analysis of five available studies suggest that the neonatal infection rate maybe up to 41%.

9. Clexane treatment needs no monitoring in pregnancy

HEMATOLOGY NOTES

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I RECOMMEND TO READ IT BEFORE DOING ONEXAM !!!!

BELIVEME ME IT WILL MAKE A DIFFERENCE ….read it after studying the text and before answering the mcqeos !!!!!

0.TTP is a clinical diagnosis and potential diagnosis in any patient with anaemia and thrombocytopenia - 95% of cases are fatal if left untreated.

1. **use of sulphonylurea is much more suggestive of G-6-PD deficiency.**

2. **Which of the following is a feature of haemoglobin S? = i s a result of a point mutation .**

3. **Patients who are refractory to platelet transfusions should first be investigated to check for adequate platelet rises - best done on a one or two hour post platelet transfusion sample**

4. **Which of the following would be the most essential investigation to establish a diagnosis of chronic lymphocytic leukaemia (CLL)?= flow cytometry of peripheral blood .**

5. **Bleomycin related pulmonary fibrosis (option B) is a major toxicity of the widely used ABVD regimen for treatment of Hodgkin's disease.**

6. **Burkitt's lymphoma is associated with a t(8;14)**

7. **The patient has a macrocytic anaemia, thrombocytopenia and neutropenia with a small number of circulating blasts. This suggests a diagnosis of myelodysplastic syndrome, and this is supported by the finding of ring sideroblasts in the marrow.**

9. Which RBC antigen is involved in the entry of *P. vivax* into red blood cells?

=

Duffy

10.The Duffy antigen receptor facilitates the entry of *P. vivax* into the red blood cells and Duffy negative individuals are therefore resistant to this strain

11. This patient has hypercalcaemia/hyperphosphataemia and hyperglobulinaemia. (The globulin level is raised at 46 g/l total protein - albumin = 46. A normal level should be below 36g/l.)

This together with normocytic anaemia and probable vertebral collapse would be highly suggestive of multiple myeloma.

12. Thalassaemia trait is a common, usually asymptomatic abnormality.

Red cells are hypochromic and microcytic, but iron and ferritin stores are normal.

Haemoglobin electrophoresis shows raised HbA2 (greater than 3.5%) and raised HbF (normally consisting predominantly of HbA with trace of HbF and HbA2).

13. Which of the following is most commonly associated with prolonged QT interval = Hypocalcaemia causes prolonged QT interval due to an increase in ST segment duration.

14. The clinical picture is disseminated intravascular coagulation.

When bleeding is the major problem, the aim is to maintain the prothrombin and activated thromboplastin time at a ratio of 1.5 times of the control and the fibrinogen level above 1 g/l.

Platelet transfusion is recommended if the count is less than 50 x 10^9/l.

Anaemia is not very severe so in this case fibrinogen replacement would be the appropriate first choice with blood transfusion an addition if bleeding continues and patient develops hypovolaemic shock.

15. Which of the following genes encoding oncoproteins is associated with follicular lymphoma?= Bcl-2

16. Which of the following hereditary cancer syndromes is associated with an increased risk of ovarian cancer? = hereditary non-polyposis colorectal cancer

17. anastrozole = Aromatase inhibitors work by preventing peripheral conversion of oestrogen and therefore cause profound oestrogen deprivation in a post-menopausal woman.

This increases the risk of osteoporosis and fragility fractures.

A DEXA scan must be done at the start of treatment to identify those patients in whom a bisphosphonate must be considered for bone protection.

18. Concerning neurofibromatosis type 1 (NF1), = Pigmented spots on the iris are a characteristic feature

19. The diagnosis of PRV is based on a high red cell mass, normal oxygen saturations and splenomegaly.

20. The vaccine should be given a minimum of two weeks before elective splenectomy in order to ensure an optimal antibody response.c

21. The age of the patient and symptoms consistent with malabsorption, coupled with low albumin and iron deficiency anaemia fit best with a diagnosis of coeliac disease. As such anti-endomysial antibodies are the most appropriate of the investigations listed to confirm the diagnosis.

22. What is the mechanism of action of hydroxycarbamide in the setting of its use in sickle cell disease? = Stimulation of the production of fetal haemoglobin

23. How will screening for sickle cell disease be undertaken?= She will first be screened for sickle cell carrier status. If that test is positive, her partner will be screened, and only if both are positive will she be offered chorionic villus sampling or amniocentesis

24. Which of the following is the blood product with the highest risk of transmission of a bacterial infection related to transfusion? = platelet

As it is stored in room temp .

25. Since platelets are stored at room temperature (22℃), the risk of bacterial contamination is highest in this blood product

26. blood group O. == The red cells have absent A /B antigen and plasma has anti A and anti B antibodies

27. Fresh frozen plasma is stored at -30℃ for up to 24 months

28. Acute intermittent porphyria (AIP) should be considered in this type of patient, where there are intermittent symptoms characterised by repeated attacks of abdominal pain where no obvious cause is found.

Other features consistent with the diagnosis include

- **Agitation**
- **Hypertension**
- **Hyponatraemia**
- **Mild leukocytosis**

29. An elevated APTT could be due to:

- **Treatment with heparin**
- **Haemophilia either A or B**
- **von Willebrand's disease**
- **Antiphospholipid syndrome.**

30. Which of the following statements regarding thrombocytosis is correct? = May occur as a response to exercise

31. metformin can lead to reduced B_{12} absorption but this is not usually a clinical problem.

32. Which of the following conditions would be expected to be associated with a raised leukocyte alkaline phosphatase (LAP) score? = Myelofibrosis

33. Which of the following is the mechanism of action of warfarin? = Inhibition of vitamin K epoxide reductase

34. Haemophilia is an X linked recessive disease

35. The most likely cause for the persisting pyrexia plus hepatitis in this immunocompromised patient treated with appropriate antibiotics would be a *Cytomegalovirus* (CMV) infection.

36. Important prognostic features in Hodgkin's disease (HD) are stage B symptoms:

- **Fever**
- **Night sweats**
- **Weight loss.**

37. Which one of the following would be most likely to indicate a delayed transfusion reaction? = =Positive direct antiglobulin test

38. DIC is associated with an elevated D-dimer

39. DIC is caused by the enhanced and abnormally sustained generation of thrombin, and is associated with elevated products of fibrin breakdown, one of these being D-dimer.

40. Cytogenetic evaluation of malignant haematological cells may have important implications for the prognosis and treatment options in acute myelogenous leukaemia (AML).

41. The features of this blood film are anaemia, thrombocytosis, neutrophilia with roughly 55% neutrophils, 40% myelocytes with less than 5% blast cells.

This is typical of chronic myeloid leukaemia which usually has associated tender splenomegaly. Usually the Philadelphia chromosome is present in 95% of cases.

42. Which of the following is a feature of hereditary haemorrhagic telangiectasia = Cerebral arteriovenous malformations

43. The clinical picture represents severe megaloblastic anaemia with cardiac failure.

The questions asks about immediate management. Although the anaemia has been developing slowly, she has become acutely

haemodynamically compromised. In such circumstances it would be most appropriate to transfuse the patient.

44. Hypoglycaemia is an important side effect of quinine therapy and should be monitored in those having intravenous quinine.also pl.falciparm cause hypoglycemia due to it is consumption .

45. She has weakness and in association with a mild anaemia and her increased MCV a vitamin C deficiency is most probable. Anaemia of this level should not cause weakness in itself. So the cause of this weakness is scurvy .

46. The history of three recent attacks of acute anxiety and abdominal pain coupled with starting the oral contraceptive pill, raises the possibility of acute intermittent porphyria. Use of IV or oral glucose during an attack can lead to more rapid resolution of symptoms,

47. Which of the following chemotherapeutic agents inhibits topoisomerase? = Etoposide

48. Etoposide inhibits DNA topoisomerase II, thereby inducing errors in DNA synthesis at the pre-mitotic stage of cell division.

49. Mutation in codon 12 of the Ras oncogene often results in which of the following? = Decreased GTP hydrolysis

50. Mutations in codon 12 result in decreased GTPase activity and a Ras protein which is 'always on' resulting in increased proliferation of the cell.

51. Spinal cord compression is a devastating complication of metastatic disease which needs to be treated promptly.

The patient needs to be nursed in bed and given high dose steroids until the MRI result is known.

Surgical decompression is best for expansile soft tissue masses which have fractured the bone and are forcing this against the spinal cord. This should then be followed up by post-operative radiotherapy to reduce the soft tissue component.

52. In the UK, the risk of transmission of hepatitis B would be best described as which of the following?

Slightly more than 2 per million donations

53. Which of the following is the minimum dataset for identifying a patient and a sample for purpose of a blood transfusion request? = he full name, gender, date of birth, address and patient identity number

54. This patient has a history which is strongly suggestive of hereditary spherocytosis, with increased haemolysis leading to increased risk of gallstones as seen here.

55. Alpha-fetoprotein (AFP), beta-hCG and PLAP (placental like isoenzyme of alkaline phosphatase) are the major tumour markers in use for the monitoring of testicular teratoma.

56. By far the most common is *Streptococcus pneumoniae,* which can cause life-threatening infection. Post splenectomy

57. Which of the following haematological disorders is inherited as an autosomal recessive condition? = Pyruvate kinase deficiency

58. Which one of the following is true of IgE? = Is increased in the serum of atopic individuals

59. hich one of the following blood types is associated with the greatest susceptibilty to severe cholera? = Blood Group O

60. Significant improvements in survival may be expected through the addition of thalidomide to standard chemotherapeutic regimes. In MM .

61. n essential thrombocytosis low risk patients have a risk of thrombosis similar to that of the age and sex-matched population and a very low risk of life-threatening bleeding, supporting close observation as the most sensible approach

62. There are a number of adverse prognostic markers for essential thrombocythaemia (ET):

- **Age above 60**

- **Symptomatology - particularly thrombosis and**
- **Platelet count above 1500.**

Generally the prognosis is extremely good in ET with survival of over two decades expected.

This patient would be regarded as low risk and hence obsevation only employed

63. chronic lymphocytic leukaemia. The best way to diagnose these is immunophenotyping of the blood - non-invasive and will give a diagnosis.

64. This patient appears to have complete suppression of all his marrow components suggesting aplastic anaemia.

65. With a history of recurrent DVT and confirmed hypoadrenalism, this patient is likely to have the antiphospholipid syndrome.

66. Which of the following statements relates to acquired sideroblastic anaemia? = There may be some response to pyridoxine therapy

67. Which of the following is a proto-oncogene? = =The N-Myc gene

68. Which of the following regarding salivary gland pleomorphic adenomas is correct = They are the most common salivary gland tumour

69. Which of the following is associated with a GH secreting pituitary tumour? =Gs alpha subunit mutation

70. At which point in the cell cycle is the cell most sensitive to radiation-induced apoptosis?= G_2-M

71. Fresh frozen plasma/prothrombin concentrates are products of choice for warfarin reversal

72. This is an infiltrating ductal carcinoma.

The lack of oestrogen receptor staining suggests a poor response to hormonal therapy with tamoxifen.

The positive C-erb B2 (HER2/neu) staining suggests that trastuzumab (Herceptin) may be effective.

73.in ITP the first line ttt is by oral prednisolone

74. acute myeloid leukaemia. Which of the following is the most important prognostic factor? = Karyotype of bone marrow

75. Organ failure is a common finding in DIC

76. Partial opioid agonists (for example, buprenorphine), when used in association with morphine, may produce a reduction in the analgesic effect due to partial antagonism.

77. These acoustic neuromas are benign neoplasms.= The lesion can be resected with a good prognosis

78. Which of the following conditions is most likely to be associated with thrombocytopenia =pernicious anaemia

79. Which of the following does not have a role in the management of chronic cancer pain? Pinavarium

80. Nifedipine helps relieve painful oesophageal spasm and tenesmus associated with gastrointestinal tumou

81. Pinavarium is used to reduce the pain duration in irritable bowel syndrome (IBS).

82. The erythrocytes of haemoglobin SC patients may sickle at a pO_2 of 4 kPa (30 mmHg)

83. in which of the following do mutations of the p53 gene frequently occur? = Bronchial carcinoma

84. Antigen presented on APCs(antigen presenting cells) is recognised by CD4 positive cells

85. y what mechanism do the platinum based chemotherapies cause DNA damage and cell death? = DNA cross linkage

86. Upregulation of which of the following proteins is associated with multi-drug chemotherapy resistance? = P-glycoprotein

87. Epstein-Barr virus is detectable in over 90% of nasopharyngeal cancers of which the most common type is the undifferentiated form.

88. This is Paget's disease of the breast. It presents insidiously and is similar in appearance to eczema; as such it often goes undiagnosed for several months.

Skin biopsy with immunohistochemistry is the first line investigation.

89. What histological grading system is used to grade prostate cancer?= Gleason

90. Which of the following investigations is not done routinely for a patient with an acute sickle cell crisis = Bone x ray

91. Which one of the following vaccinations should not be given to patients undergoing chemotherapy= rubella

92. Which of the following infusion times would be appropriate during the transfusion of a blood product in a stable patient?= A packed cell transfusion should be given over 90 minutes

93. AL amyloidosis is associated with deposition of immunoglobulin light chains, and is caused by multiple myeloma.

94. Interferon alpha immunotherapy is used as treatment of which for the following conditions = hairy cell leukemia

95. Which of the following is a typical side effect of cisplatin = Ototoxicity .

96. Products implicated in cases of transfusion associated (TA)-GVHD include:

- **Non-irradiated whole blood**
- **Packed red blood cells**
- **Platelets**
- **Granulocytes and**

- **Fresh non-frozen plasma.**

97. In young patients with a BRCA mutation, mammographic screening has a low sensitivity for detecting tumours this because their breast tissue is denser.

98. G6PD deficiency is a red cell enzymopathy that can lead to acute intravascular haemolysis after exposure to certain drugs, infection, etc.

You would therefore get haemoglobinuria but would not get a positive direct antiglobulin test.

99. Drugs which inhibit dihydrofolate reductase are:

- **Methotrexate**
- **Pyrimethamine and**
- **Trimethoprim.**

100. The triple assessment of a breast lump is essential to diagnose a breast lump accurately. It involves physical examination, mammography and then ultrasound guided FNA. ايام الجراحه والمطري .....!!!

101. Sickle cell disease is most common in regions where *P. falciparum* malaria is endemic and in ethnic groups that have migrated from these areas

102. A 'group and save' is adequate for elective surgeries and is standard practise in most modern blood banks. This will involve blood grouping and its confirmation as well as an antibody screen (option B).

103. Which of the following is true about manufacture of pooled plasma derivatives = The end product is a freeze dried product

104. This patient has inoperable carcinoma and already needs opiate analgesia orally; as she is vomiting she will need parenteral analgesia.

The most effective way of achieving this, and being able effectively to titrate the dose to achieve adequate analgesia, is subcutaneous diamorphine by continuous infusion.

105. HbS is caused by a single base mutation on the beta-chain]

106. The clinical scenario suggests a diagnosis of bisphosphonate associated osteonecrosis of the jaw. This is a recently recognised adverse effect of bisphosphonate therapy. This is a consequence of potent anti-resorptive action of the nitrogen containing bisphosphonates. Like zoledronic acid .

107. hich of the following statements regarding myelodysplastic syndrome is correct = He is more likely to die from an infection than from leukaemic transformation

108. This lady has breast cancer which is disseminated and gone to her spine to cause compression.

There is compression of the conus medullaris to give her a mixture of upper and lower motor signs (LMN). Because of the anatomy of the spinal cord if there is compression at the level of the conus medullaris some of the cord is compressed to cause upper motor (UMN) signs and some of the nerves are compressed to give lower motor signs. Hence she has UMN signs in L5-S2 but LMN signs in L3-4.

109. Tranexamic acid inhibits thrombolysis without increasing the risk of thrombosis. As such it may be of value in patients undergoing surgery who have inherited factor IX deficiency in order to reduce the perioperative risk of bleeding.

110. By what mechanism does topoisomerase catalyse DNA replication? = Helix torsion release

111. Lhermitte's sign is classically associated with multiple sclerosis and suggests a lesion of the dorsal columns of the cervical cord or of the caudal medulla.

112. What is the best initial investigation for a patient with suspected malignant spinal cord compression = MRI spine

113. Due to the spine being compressed by a soft tissue lesion MRI gives the best image quality to identify the site of disease accurately and to allow prompt treatment with either radiotherapy or surgical decompression.

114. Which of the following histopathological subtypes is essential for successful treatment with cetuximab = K-ras wild-type

115. Cetuximab is licensed by NICE in metastatic colorectal cancer for k-ras wild-type proven patients who require downstaging prior to surgical resection of liver metastatic disease.

116. What is the DNA repair mechanism by which the BRCA1 and BRCA2 proteins act = Double strand DNA break repair

117. You decide to treat the patient as a sickle cell crisis.

What treatment would you start in the Emergency department? = Analgesia, oxygen, hydration and antibiotics

118. Paget's disease of bone usually occurs in later life.

In Paget's disease the continual repair process of bone is disturbed and ends at the stage of vascular osteoid bone. Bones are very weak.

Osteogenic sarcoma complicates 5% of cases.

119. Which of the following mechanisms best explains this resistance to treatment with erlotinib = Mutation in the ATP binding pocket of the EGFR kinase domain

120.w hich of the following statements is true of sickle cell disease =

- **There is often an inability to concentrate urine**

121. Lynch syndrome (HNPCC or hereditary non-polyposis colorectal cancer) is an autosomal dominant genetic condition which has a high risk of colon cancer

122. Lynch syndrome (HNPCC or hereditary nonpolyposis colorectal cancer) is an autosomal dominant genetic condition which has a high risk of colon cancer as well as other cancers including

- **Endometrial**
- **Ovary**
- **Stomach**

- **Small intestine**
- **Hepatobiliary tract**
- **Upper urinary tract**
- **Brain and**
- **Skin.**

123. What is the best predictive factor for local recurrence of breast cancer after surgery, chemotherapy and radiotherapy = Age

124. Patients below the age of 40 are significantly more likely to develop local recurrence of a breast cancer than those aged 41+.

125. What is the mechanism by which patients with testicular cancer develop gynaecomastia = Raised oestrogen levels

126. What is the best test for monitoring the patient while she is receiving Herceptin (trastuzumab) = Three monthly echocardiogram

127. NICE has approved the use of anastrozole for first line adjuvant endocrine treatment of primary breast cancer. It works as an aromatase inhibitor preventing the peripheral conversion of oestrogen (which is the primary source in post-menopausal women).

128. This young boy is up to date with all his childhood immunisations; therefore he should need yearly influenza and five yearly Pneumovax vaccinations. It is worth mentioning that all hyposplenic patients should be offered meningococcal ACWY vaccine if travelling to areas at high risk of meningitis.

Done by dr.faisal gamal hemeda …..

Egypt ……28-11-2013……..3-39am

thanks

INFECTION NOTES

Admin of MRCP part1, 2 written and PACES الزمالة البريطانية لامراض الباطنة

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I RECOMMEND TO READ IT BEFORE DOING ONEXAM !!!!

BELIVEME ME IT WILL MAKE A DIFFERENCE ….read it after studying the text and before answering the mcqeos !!!!!

1. With a recent history of travel to Nigeria, cerebral malaria caused by *P. falciparum* should be considered as a likely cause of her symptoms.

Therefore, a malaria blood film should be performed.

2. This man was already infected with two blood-borne viruses (hepatitis B and C). His absolute lymphocyte count was low. CT scan showed multiple ring-enhanced lesions, which were suggestive of cerebral toxoplasmosis.

Therefore, testing HIV is the next best course of action. Finding multiple ring-enhanced lesions on CT scan needs further investigations.

3. Plain radiography of chronic osteomyelitis typically shows patchy osteopenia or frank bone destruction, loss of definition of the cortex, areas of sclerosis, or periosteal reaction with new bone formation. These changes take many weeks to develop fully.

For more rapid clarification of diagnosis however, specialised imaging is needed.

Computed tomography (CT) scanning may be able to identify cortical erosion that has been missed on plain films and can demonstrate sequestra within bone.

There is a lack of sensitivity early in the disease. White cell isotope scanning is widely used but there is a lack of consensus on the utility of various tests.

Conventional three-phase technetium bone scans are sensitive but non-specific. Specificity may be increased by the addition of indium-labelled leukocyte scanning.

Magnetic resonance imaging (MRI) is the standard and best method for diagnostic imaging of osteomyelitis. It can detect intra- and extraosseous oedema, abscesses, dead bone, and sinus tracts. It can distinguish active from inactive infection.

4. Which of the following investigations is used to monitor the treatment of infective endocarditis?= The most useful laboratory test for monitoring the response to treatment (which is usually obvious clinically) is serial C reactive protein estimation.

5. West Nile virus is a *Flavivirus* of the Japanese encephalitis family. It is thought it is spread when a mosquito bites an infected bird and then bites a human. Few of those bitten develop symptoms and even fewer progress to severe disease.

West Nile virus can be spread via vertical transmission as well as blood transfusions and organ transplant.

If infected with the virus, there are generally three different outcomes:

1. **Asymptomatic (estimated 90%)**
2. **A mild febrile syndrome known as West Nile fever or rarely**
3. **Neuro-invasive disease termed West Nile meningitis or encephalitis.**

West Nile fever can present with several vague 'generally unwell' symptoms that tend to last three to six days such as:

- **Abdominal pain**
- **Diarrhoea**
- **Fever**
- **Headache**
- **Arthralgia**
- **Nausea and vomiting**

- **Rash**
- **Sore throat**
- **Lymphadenopathy.**

The following symptoms are suggestive of West Nile encephalitis/meningitis and prompt medical attention is required:

Extrapyramidal signs:

- **Confusion and seizures**
- **Loss of consciousness or coma**
- **Muscle weakness**
- **Stiff neck**
- **Weakness of one arm or leg (a poliomyelitis-like paralysis).**

Diagnosis can be via blood or cerebral spinal fluid serology for West Nile antibodies. More rapid techniques using polymerase chain reaction may be used.

Due to the viral nature of the infection the current best treatment is supportive. In general it has an excellent prognosis. For those rare cases with severe infection it may lead to brain damage and death. Approximately 10% of patients with brain inflammation do not survive.

In 2003 there were 276 deaths attributed to West Nile virus.

Interestingly, West Nile Virus is endemic in the avian population. The deaths of large numbers of birds in an area may thus herald an imminent epidemic of West Nile virus.

6. A patient is planning to travel through the southern states of America but is worried about West Nile virus.

Which of the following statements regarding West Nile virus is correct?

May be associated with poliomyelitis-like paralysis

7. This patient has endocarditis.

In addition to the symptoms that might be attributed to endocarditis (fatigue, night sweats), she also has a history of altered bowel habit that is very suggestive of an underlying malignancy.

***Streptococcus bovis* is a normal commensal of the gastrointestinal (GI) tract. However, *S. bovis* bacteraemia and endocarditis have a strong association with GI malignancy.**

Coagulase-negative staphylococcal endocarditis is exceptionally rare in native valve endocarditis, though it is the commonest cause of prosthetic valve endocarditis in the postoperative period.

***Staphylococcus aureus* endocarditis is typically the result of a focus of staphylococcal infection (for example, skin abscess).**

***Streptococcus mitis* endocarditis and viridans streptococci (which include *S. mitis*) are normal commensals of the oropharynx and GI tract.**

Endocarditis is usually associated with poor dental hygiene; overall, *Streptococcus viridans* accounts for ~40% of cases of endocarditis.

8. Quinupristin and dalfopristin are a synergistic combination of a streptogramin A and B respectively.

They are effective against Gram positive aerobes and are particularly useful against resistant *Strep. pneumoniae* and *Staph. aureus*.

They can be administered only via a central line.

9. Both *Cryptosporidium* and *Cytomegalovirus* are found in patients with CD4 count less than 300 cells/µl. It causes chronic diarrhoea (more than four week's duration).

10. BAL is more sensitive than sputum collection at detecting TB, either by smear or culture.

11. This young man has a recurrent meningococcal meningitis, and deficiencies of complement C5-9 predispose to *Neisseria* infections (complement deficiencies).

One must recognise that the diplococci seen on microscopy are those of *Neisseria meningitidis.def of c3 .*

12. Which of the following is a cause of isolated B-cell immune deficiency?=MM

13. Doxycycline is the drug of choice for NGU. Alternative therapies include erythromycin, azithromycin, ofloxacin and ciprofloxacin.

***Chlamydia trachomatis* is the commonest cause of NGU accounting for 30-50% of cases.also PID**

14. acute aortic regurgitation=Findings that would be typical include:

- **Large pulse volume**
- **Increased pulse pressure**
- **A decrescendo murmur**
- **A low diastolic blood pressure.**

Vasoconstriction not dilatation is typically found.

15. Varicella has a secondary infection rate in household contacts of 90%. It is commonest in spring time, and the incubation period is 14-21 days. It shares the herpes virus family properties of latency and reactivation (zoster).

Risks to the fetus and neonate relate to the time of infection:

- **Less than 20 weeks pregnancy: congenital varicella (limb hypoplasia, microcephaly, cataracts, growth retardation, skin scarring). High mortality.**

- **Second to third trimester: herpes zoster in an otherwise healthy infant.**
- **Minus seven days to plus seven days after delivery: severe and even fatal disease (30% mortality).**

Although a live attenuated vaccine is available, it is not licensed for use in the UK.

Varicella zoster immunoglobulin is prepared from pooled plasma of UK blood donors with a history of recent chickenpox or herpes zoster.

Being an immunoglobulin, it is a protein concentrate, and should be stored between 2 and 8°C. Donors are screened for HIV, hepatitis B and hepatitis C.

VZIG prophylaxis is recommended for patients who fulfil all the following criteria:

- **A clinical condition that increases the risk of severe varicella, (for example, immunosuppression, neonates, pregnant women)**
- **No antibodies to varicella zoster**
- **Significant exposure to chickenpox or herpes.**

VZIG prophylaxis is of no benefit if chickenpox has already developed.

Severe or fatal varicella can occur despite VZIG prophylaxis. Active immunisation should therefore be used for susceptible immunosuppressed patients at long term risk.

Clinical chickenpox occurs in 50% of those who receive VZIG prophylaxis, and 10% more will be affected sub-clinically.

16. Which of the following is true of *Giardia lamblia* infection?= Causes steatorrhoea.malabsorbation is common.

17. The first line of management of needlestick injuries includes immediate washing under running water.

All incidents should be reported to the occupational health department and have a careful risk assessment.

HBIG is given only if the donor is known to be hepatitis B positive and the victim is non-immune.

Antiretroviral therapy is given, after counselling, if the donor is known HIV positive and the exposure is deemed high risk.

18. Of the following Jones criteria, two major, or one major and two minor, and evidence of recent streptococcal infection, is required for the diagnosis of rheumatic fever (RF).

Major:

- **Pancarditis**
- **Polyarthritis**
- **Erythema marginatum**
- **Chorea**
- **Subcutaneous nodules**
- **The rash is macular.**

Minor:

- **Fever**
- **Polyarthralgia**

- **History of RF**
- **Raised erythrocyte sedimentation rate/c-reactive protein (ESR/CRP)**
- **Prolonged PR interval on electrocardiogram (ECG).**

19. This history of severe exudative pharyngitis in a person who has recently travelled to eastern Europe is highly suggestive of diphtheria.

20. Bacteria develop resistance to antibiotics by gaining genes that encode particular proteins that offer protection to the organism.

Sometimes this is by mutation and other times the gene may be acquired from another bacterial species.

The genes are usually found in plasmids - circular segments of DNA separate from the bacterial chromosome.

Plasmids can easily spread from one bacteria to another - a sort of resistance package that bacteria can share.

(best explains the loss of antibiotic resistance=Loss of a plasmid containing the resistance gene)

21. Three factors stand out:

1. **The rapid spread of the diarrhoea and vomiting**
2. **The fact that most of the passengers had eaten in the ship's seafood restaurant**
3. **Patients admitted to the hospital so far show no signs of neutrophilia, but do show signs of dehydration.**

Norovirus is concentrated in shellfish, small oysters and plankton, and person to person spread can occur from aerosols of projectile vomit or faecal material.

Rotavirus, in contrast, occurs more frequently in and is more severe in the paediatric population.

22. Symptoms are suggestive of polyradiculomyelopathy (weakness of legs with involvement of sphincters).

Increased neutrophils are found in CMV polyradiculomyelopathy but not in Guillain-Barré syndrome.

HIV encephalopathy usually causes confusion and memory loss. It does not involve sphincters.

Guillain-Barré syndrome causes polyradiculopathy, explaining all her symptoms, but with normal cell counts and raised protein in the CSF.

Herpes simplex encephalitis causes fever, headache, confusion and deteriorating level of consciousness.

23. Chemoprophylaxis is not normally indicated for close contacts of those with pneumococcal meningitis.

Chemoprophylaxis with rifampicin, ceftriaxone, ciprofloxacin or azithromycin is used for meningococcal meningitis.

Close contacts of *Haemophilus influenzae* meningitis should receive rifampicin; children under 2 years should be vaccinated.

24. *Nocardia* are aerobic, Gram positive branching filamentous bacteria which often appear beaded on staining. Nocardiosis can be diagnosed rapidly by examination of sputum or pus with the Gram stain and a modified acid-fast stain

Pneumonia is typically found in the immunocompromised, as in this case and may be a single lesion or extensive pneumonic consolidation.

The drug of choice is trimethoprim-sulfamethoxazole.cotrimexathole.

25. Koplik's spots are small, irregular, bright red spots with blue-white centres, occurring on the inside of the cheek next to the premolars.

Seen only in measles, they are diagnostic.

26. Patients should be vaccinated with an appropriate pneumococcal vaccination at least two weeks prior to surgery to allow the maximal humoral immune response.time needed 4 antibodies formations.if elective surgery but if it was emmergency then prophylacsis post operative.

27. Which of the following is correct concerning oseltamivir=It is of value in prophylaxis against influenza=However, viral replication is rapid and to be effective the drug must be given as early as possible after the development of symptoms of flu and preferably within 48 hours.

28. (Tamiflu), like its predecessor zanamivir (Relenza) functions as an antiviral through inhibition of the enzyme neuraminidase, thus slowing viral replication down rather than directly killing the virus particle.

This slowing down of replication is important in permitting time for the body's own immune system to deal with the virus.adminstration oral and so S.E is N.V.D…

29. Cattle are a major reservoir of *Escherichia coli* O157:H7 and contaminated meat is the most commonly implicated source of outbreaks.

Raw meat should be separated from cooked and ready-to-eat food. Hands should be washed after handling raw meat.

30. the following measures would be most effective in reducing transmission of *E coli* O157:H7 during an outbreak of diarrhoea caused by this organism?= Ensuring that meat products are thoroughly cooked

31. Cross-infection via hands of medical and nursing staff is a very important vehicle of transmission of MRSA.

Hand washing before and after contact with patients is the single most effective measure to control hospital spread of this organism.

Screening of ward staff is appropriate only in certain situations and should not be carried out unless recommended by the hospital infection control team.

Vancomycin should never be used for MRSA decolonisation.

The hospital infection control policy should outline which patients should be screened and when decolonisation should be attempted.

32. Multiple violaceous painless lesions are typical of Kaposi's sarcoma in Caucasians. This is associated with HHV 8.

33. AIDS defining diseases are:

- ***Cytomegalovirus* disease (other than liver, spleen, or nodes)**
- ***Cytomegalovirus retinitis* (with loss of vision)**
- **Encephalopathy, HIV-related**
- ***Herpes simplex*: chronic ulcer(s) (>1 month's duration); or bronchitis, pneumonia, or oesophagitis**
- **Histoplasmosis, disseminated or extrapulmonary**
- **Isosporiasis, chronic intestinal (>1 month's duration)**
- **Kaposi's sarcoma**
- **Lymphoma, Burkitt's (or equivalent term)**
- **Lymphoma, primary, of brain**
- ***Mycobacterium avium* complex or *M. kansasii*, disseminated or extrapulmonary**

- ***Mycobacterium tuberculosis*, any site (pulmonary or extrapulmonary)**
- ***Mycobacterium*, other species or unidentified species, disseminated or extrapulmonary**
- ***Pneumocystis carinii* pneumonia**
- **Pneumonia, recurrent**
- **Progressive multifocal leukoencephalopathy**
- ***Salmonella* septicaemia, recurrent**
- **Toxoplasmosis of brain**
- **Wasting syndrome due to HIV.**

32. Japanese encephalitis is an RNA virus which is endemic in India, East Asia, Malaysia and the Phillipines.

Previous infection by a pathogen which is a member of the *Flavivirus* family seems to protect against serious disease or death when infection occurs with another member of the *Flavivirus* family. For instance previous exposure to dengue lowers the risk of death when infected by Japanese encephalitis.

Infection with Japanese encephalitis has been reported in travellers who have spent only short periods in endemic areas, and transplacental transmission can occur.

An immunisation is available for travellers.

33. Pneumococcal meningitis is commoner in older patients.
Gram positive diplococci

34. Splenectomised patients are at increased risk of infection with encapsulated bacteria and infections that are filtered by the spleen (for example, malaria).

35. Patients who have emergency splenectomies should be vaccinated post-operatively, though the response may not be as efficient.

36. Infectious mononucleosis has similar signs and symptoms to acute HIV syndrome but with a positive Paul-Bunnell test.

Cytomegalovirus (CMV) mononucleosis has a longer incubation period of 20-60 days. The illness takes two to six days. There are fever, chills, profound fatigue, malaise and myalgia.

37. Nevirapine can cause acute hepatitis and skin rash as a part of hypersensitive reaction especially when the CD4 count is over 250 cells/ml in women and over 400 cells/ml in men. Nevirapine should not be prescribed in those conditions.

Atazanavir causes hyperbilirubinaemia and rarely renal stones.

Lamivudine does not cause hypersensitivity reaction.

Tenofovir causes proximal tubular damage.

Zidovudine causes bone marrow suppression.

38. Aciclovir acts through inhibition of viral deoxyribonucleic acid (DNA) polymerase but it is a pro-drug and first requires phosphorylation by thymidine kinase.

39. Yellow fever occurs only in tropical South America and in sub-Saharan Africa.

40. Acute human immunodeficiency virus (HIV) presents two weeks to three months after exposure to the virus; the illness typically consists of:

- **Fever**
- **Arthritis**
- **Rash**
- **Lymphadenopathy.**

.

41. Herpes simplex encephalitis affects the temporal lobe in most cases.

If the temporal lobe is affected the following signs will be seen:

- **Disturbance of auditory sensation and perception**
- **Disturbance of selective attention to auditory and visual input**
- **Disorders of visual perception**
- **Impaired organisation and categorisation of verbal material**
- **Disturbance of language comprehension**
- **Impaired long term memory**
- **Altered personality and affective behaviour and**
- **Altered sexual behaviour.**

The MRI just confirms the diagnosis.

42. For suspected pleural TB, pleural biopsy sent in normal saline for AFB smear, mycobacterial culture and histology is the most sensitive method for laboratory confirmation.

43. Pneumothorax is a well-known complication of PCP. An acute history of chest pain with breathlessness and diminished breath sounds is typical of pneumothorax.

44. Serial measurements of CRP concentrations provide a simple, effective, non-invasive means of measuring response to antibiotic therapy.

45. Human cryptosporidiosis causes self-limited diarrhoeal illness in healthy individuals, mostly children; and severe prolonged diarrhoea in patients with AIDS.

Transmission is via human-to-human fecal-oral contamination.

Animals are the major reservoir and outbreaks have been associated with water supplies and public swimming pools.

46. Brucellosis is a zoonosis, spreading from infected animals particularly cattle. There are four species: melitensis, abortus, suis, and canis.

Pasteurisation of milk has dramatically decreased the incidence in the UK.

Brucella **are Gram negative bacilli which are fastidious. There is usually a history of exposure, and the symptoms are rather non-specific with fever, malaise, arthralgia and depression. Thirty five per cent have hepatosplenomegaly.**

Leukopaenia is common, and 75% have a positive blood culture (90% of bone marrow cultures will be positive).

47. Keratitis due to varicella zoster virus (VZV) may subsequently lead to iridocyclitis and secondary glaucoma.

48. ***Campylobacter*** **infection usually presents with bloody diarrhoea and 'pseudoappendicitis' (RIF pain). The patients often have a prodrome of fever, headache and myalgia.** ***Campylobacter*** **takes around seven to 10 days to incubate.**

Both ***Cryptosporidium*** **and** ***Cytomegalovirus*** **are found in patients with CD4 count less than 300 cells/µl. It causes chronic diarrhoea (more than four week's duration).**

49. Nevirapine can cause acute hepatitis and skin rash as a part of hypersensitive reaction especially when the CD4 count is over 250 cells/ml

50. This patient has pneumococcal meningitis, caused by the Gram positive coccus *Strep. pneumoniae*.

This is the second commonest cause of bacterial meningitis (commonest in the elderly) and is associated with the highest mortality (20%) and highest morbidity, such as deafness which may occur in 50%.

51.toxoplasmosis can presented with fits in AIDS.

52. Subacute bacterial endocarditis (*Streptococcus viridans*) has a better prognosis.

53. Brucellosis is a recognised cause of spondylitis

54. Keratitis due to varicella zoster virus (VZV) may subsequently lead to iridocyclitis and secondary glaucoma.

55. Haemosiderosis usually arises due to parenteral iron overload, for example, in patients with aplastic anaemia after multiple transfusions. It is not commonly associated with cirrhosis.NOT A CAUSE OF CHRONIC LIVER DISEASE.

56. Emtricitabine causes hyperpigmentation of skin including palmar creases in 8% of black patients.

57. Lopinavir =Hypertriglyceridaemia

58. This patient has the typical features of glandular fever and this is confirmed by the typical rash following the introduction of amoxicillin.

This rash is considered almost pathognomonic of glandular fever and will subside following withdrawal of amoxicillin.

59.

47 notes from 90 onexam mcqeos !!!!!

THANKS A LOT

https://www.facebook.com/groups/mrcpuk/

BY.FAISAL HEMEDA

AIN SHAMS UNI-EGYPT

NEPHRO NOTES

د.فيصل جمال عبدالغني حميده

Admin of MRCP part1, 2 written and PACES الزمالة البريطانية لامراض الباطنة

https://www.facebook.com/groups/mrcpuk/

I RECOMMEND TO READ IT BEFORE DOING ONEXAM !!!!

1.Administration of albumin (1.5 g per kilogram of body weight at diagnosis and 1.0 g per kilogram 48 hours later), in addition to antibiotics, has been shown in randomised controlled trial to markedly reduce the risk of hepatorenal syndrome (option B).

2.CD4+ CD25+ Fox-P3 + T regulatory cells are thought to be the most important T regulatory cell population. They are thought to play an important role in regulating immune

responses after invading organisms have been tackled and preventing the development of autoimmunity.

3. Statins should be avoided in patients with rhabdomyolysis due to myotoxicity.

In those taking statins the risk of sporadic rhabdomyolysis is 0.44 per 10,000 patients per year.

Relatively safe in these circumstances are:

- **Asprin**
- **Oral calcium**
- **Paracetamol**
- **Inhaled salbutamol.**

4. . Churg-Strauss syndrome: correct.
Acute presentation with glomerulonephritis, eosinophilia, skin vasculitis, and elevated inflammatory markers on a background of longstanding asthma makes Churg-Strauss the most likely diagnosis.

5. ACE inhibitors are contraindicated in pregnancy. There is an increase in congenital cardiac and neurological abnormalities (New England Journal of Medicine 2006 354:2443-2451); and despite the fact this woman has microalbuminuria, use of an ACE inhibitor is not recommended.

6. Corticosteroid therapy has not been associated with ATN.

7. PD peritonitis is an important complication of peritoneal dialysis. The vignette describes a typical presentation.

A high suspicion for the diagnosis is required and empirical treatment is often started.

PD fluid WCC of greater than 100/mm^3 is diagnostic of PD peritonitis and should be selected.

Raised serum CRP may be associated but is not necessarily diagnostic.

Likewise, doubling of serum creatinine may have multiple reasons and should not be selected.

Although amylase may be raised there can be other intra-abdominal causes.

A PD fluid neutrophil percentage of greater than 50% and not 10% is in keeping with PD peritonitis.

8. A diagnosis of Churg-Strauss syndrome requires four of the following features:

- **Asthma**

- **Eosinophilia greater than 10%**
- **Mononeuropathy or polyneuropathy**
- **Paranasal sinus abnormality**
- **Non-fixed pulmonary infiltrates visible on chest radiographs and**
- **Blood vessels with extravascular eosinophils.**

Peripheral alveolar filling infiltrate predominantly in the upper lobes on a chest radiograph is typical of chronic eosinophilic pneumonia.

A peripheral 'stocking and glove' neuropathy is not typical of Churg-Strauss syndrome and is more common in type 2 diabete

9. Digoxin is cleared by the kidneys so the maintenance dose would require adjustment in renal failure.

10. Administering aminoglycoside less frequently (option A) allows the kidney more time to "recover" from drug accumulation within the proximal tubular cells and hence minimises nephrotoxicity.

11. A young man presenting with renal failure, haematuria and liver and renal masses raises the suspicion of polycystic kidney disease.

Associated liver cysts are found in around 80% of individuals with polycystic kidney disease. Pancreatic cysts are rarer, and may in some cases be associated with recurrent pancreatitis.

Patients are at increased risk of renal stones, but the predominant increase is seen in urate stones, rather than other types.

Up to 25% of patients may have some degree of mitral valve prolapse.

12. The features of shoulder pain associated with a past history of carpal tunnel syndrome in a patient receiving haemodialysis suggests a diagnosis of ß2 microglobulin amyloidosis.

Amyloid deposits composed of ß2 microglobulin as the major constituent protein are mainly localised in joints and periarticular bone and lead to destructive arthropathy which tends to develop five to ten years after the initiation of dialysis.

Death from amyloidosis of gut and heart may occur after 20 years of dialysis.

13. Renal scintigraphy with DMSA involves administration of radioactive isotope which is avidly taken up by the renal parenchyma (option C). This permits the identification of regions

of decreased uptake that may represent acute inflammation (such as pyelonephritis) or renal scarring.

14. Catheter removal (option C) is strongly recommended in *Staphylococcus aureus* bloodstream infection given the high risk of recurrence in these patients.

Cloxacillin should not be used in MRSA infection (option A incorrect); vancomycin is the drug of choice.

Daptomycin might be needed if minimum inhibitory concentration is ≥ 2 μg/ml indicative of heterogeneous vancomycin intermediate *S. aureus* (hVISA).

We strongly advise catheter removal in the following circumstances of catheter-related bloodstream infection:

- **Severe sepsis**
- **Haemodynamic instability**
- **Endocarditis**
- **Evidence of metastatic infection, or**
- **Persistence of bacteraemia after 48-72 hours of effective antibiotics.**

Furthermore, salvage of catheter is more reserved for low-virulence pathogens such as coagulase negative *Staphylococci*, but not MRSA.

Antibiotic lock therapy involves instillation of high-dose antibiotics (prepared using heparin) at the end of each dialysis

session into the catheter to maintain high concentrations within the dialysis catheter.

The reported success rate to salvage a tunneled catheter using a combination of systemic antimicrobials and antibiotic lock therapy is only 40% to 55% (option D) with *S. aureus* (compared with 75% to 84% with coagulase negative *Staphylococci*).

15. The three major mechanisms of hypophosphataemia are

- **Redistribution of extracellular phosphate into cells**
- **Decreased intestinal absorption and**
- **Depletion due to increased urinary loss.**

16. Alport's syndrome comprises:

- **Sensorineural hearing loss**
- **Progressive renal failure**
- **Haematuria**
- **Ocular abnormalities including cataract formation.**

The condition is often associated with an X linked dominant inheritance pattern and hence males are more severely affected.

Prevalence is around 1 in 5000, and the condition occurs because of type 4 collagen mutations. Deafness usually occurs before the onset of renal failure, which is related itself to progressive nephritis.

Rigorous control of hypertension may delay the onset of end stage renal failure, which is seen in 90% of patients with Alport's by the age of 40 years.

17. Of the drugs listed lithium would be the most likely to cause a nephrogenic DI.

18. The most likely diagnosis here is adult polycystic kidney disease, which is associated with valvular heart abnormalities, incompetence and aneurysms of the cerebral circulation.

However, it is also associated with excessive erythropoietin production and polycythaemia.

19. Renal cell carcinomas may present in a variety of ways, with only a minority being diagnosed with the classical triad of:

- **Haematuria**
- **Loin pain**
- **A palpable mass.**

Relatively common presentations include:

- **Anaemia**
- **Hypertension**
- **Pyrexia of unknown origin**
- **Fatigue**
- **Increased plasma viscosity.**

Less common presentations include:

- **Hypercalcaemia**
- **Polycythaemia**
- **Liver dysfunction**
- **Enteropathy**
- **Myopathy.**

Urinalysis may show sterile pyuria, as here.

Other causes of sterile pyuria are:

- **Partially treated urinary tract infections**
- **Tuberculosis of the renal tract**
- **Urethritis and sexually transmitted diseases**
- **Acute glomerulonephritis**
- **Tubulo-interstitial diseases**
- **Adult polycystic kidney disease**
- **Renal stones.**

Ultrasound scan of the renal tract would be the first investigation of choice, as it is able to pick up 95% of renal cell carcinomas greater than 1 cm in diameter. It would also exclude infective or inflammatory collections within the renal tract.

If required a computerised tomography (CT) +/- guided biopsy could be obtained to prove the diagnosis.

An intravenous urogram (IVU) was considered the investigation of choice before the advent of ultrasound.

A chest x ray and bone scan would be required to complete the basic investigations.

20. Small kidneys on USS suggest chronic renal failure but the following causes of chronic renal failure can present with normal/enlarged kidneys:

- **Amyloidosis**
- **Polycystic kidney disease**
- **Diabetic glomerulosclerosis**
- **Scleroderma**
- **Rapidly progressive glomerulonephritis.**

Decreased fractional Na clearance, hyperphosphataemia and hyperkalaemia are features of acute or chronic renal failure.

LVH is probably more likely to be seen in chronic renal failure but is not reliable.

21. A. Fusion of foot processes of podocytes is seen on electron microscopy, not light microscopy.

22. Thyroxine does not cause or exacerbate hyperkalaemia.

23. The free water calculation is as follows:

(Serum sodium-140)/ 140) x total body water = free water deficit in litres. (168-140/140) = 0.2 0.2 X 40 = 8 litres

24. This question tests knowledge of the classification of chronic kidney disease.

The table below lists stages of CKD and corresponding GFRs.

Options A, B, C and E are not reflective of stage III chronic kidney disease and are therefore incorrect.

Stage GFR ml/min/1.73m^2

1 >90

2 60-89

3 30-59

4 15-29

5 <15

25. Analgesic nephropathy would be a consequence of non-steroidal anti-inflammatory drugs (NSAIDs) not paracetamol.

26. Approximately 50% of subjects with focal segmental glomerulosclerosis (FSGS) do not respond to steroid therapy but angiotensin-converting enzyme (ACE) inhibitors are a recognised strategy to slow the progression of renal disease.

This patient is clearly at high risk of cardiovascular disease with a very high cholesterol but the question specifically asks about renal disease.

27. Chronic rejection is characterised by fibrosis of normal organ structures.

The pathogenesis of chronic rejection is not clear - some prefer the term "chronic allograft dysfunction" since both immunological (antigen-dependent and antigen-independent) and non-immunological factors have been identified.

Cell-mediated and humoral immune mechanisms have been implicated in this form of graft rejection.

It has also been suggested that rejection is a response to chronic ischaemia caused by injury to endothelial cells.

Proliferation of intimal smooth muscle is observed leading to vascular occlusion.

The fact that chronic rejection is rare in transplants between human leukocyte antigen (HLA)-identical siblings suggests that HLA-antigen dependent immunological factors are important.

Risk factors include:

- **Number of previous acute rejection episodes**
- **Presence of anti-HLA antibodies**
- **Anti-endothelial antibodies**
- **Cytomegalovirus infection**
- **Dyslipidaemia**
- **Hypertension**
- **Functional mass of the donor kidney and**
- **Delayed graft function (a clinical manifestation of ischaemia/reperfusion injury).**

28. Cinacalcet is a calcimimetic

29. Contrast induced nephropathy is a complication of intravenous contrast given during some radiological procedures. Existing renal impairment, dehydration and the use of metformin increase the risk of this.

Metformin is usually withheld for 48 hours after the use of contrast.

30. Acute imaging of the kidneys is intended primarily to exclude obstructive uropathy, which would be demonstrated on ultrasound imaging. Ultrasound imaging is a safe, non-invasive means rapidly to exclude a correctable cause of renal impairment. It is readily available in most hospitals and can be performed by a sonographer or radiologis

31. This patient has nephrotic syndrome, which is a combination of:

- **Proteinuria (usually > 3g/24 hrs)**
- **Hypoalbuminaemia (<35g/L)**
- **Oedema**
- **Hyperlipidaemia.**

The most appropriate course of action here would be to undergo a trial of steroid therapy

32. Carbamazepine as well as other agents such as thiazides and selective serotin reuptake inhibitors (SSRIs) may potentiate its release.of ADH.

THANKS A LOT

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BY.FAISAL HEMEDA

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NEURO ……ONLY PASTEST NOTES

OPTHALMOLOGY

1. **The history of anisocoria, with headaches and diplopia should ring alarm bells, in that a life-threatening posterior communicating artery aneurysm/berry aneurysm needs to be excluded urgently.**

Anisocoria being an efferent problem will not give a relative afferent papillary defect.

Holmes-Adie syndrome is characterised by a tonic pupil, which is larger than normal and constricts slowly in bright light, and absent deep tendon reflexes (most marked in the Achielles tendon). It develops gradually, and is a benign condition. It is thought to be the result of a neurotrophic viral infection.

The sudden onset of the symptoms make a brain tumour less likely that an aneurysm.

Argyll Robertson pupils are typically bilateral and are small and irregular with an absent light reflex, prompt accommodation reflex and slow response to mydriatics. The most common case is syphilis.

2. Work Smart Session - MRCP Part 1

Question: 5 of 10

Time taken: 07:16

A 25-year-old man presented with night blindness and gradual deterioration of his peripheral visual fields bilaterally.

Ocular examination revealed bony spiculed lesions in the peripheral retina of both eyes with attenuated retinal blood vessels.

His only other past medical history is that of a first degree heart block.

Which one of the following statements is most correct?

(Please select 1 option)

- **There is a one in two chance of him passing this disease on to his offspring**
- **There is a one in four chance of him passing this disease on to his offspring**
- **There is a one in 10 chance of him passing this disease on to his offspring**
- **There is a 100% chance of him passing this disease on to his offspring**
- **There is no chance of him passing this disease on to his offspring Correct**

The diagnosis is Kearns-Sayre syndrome.

This is a mitochondrial inherited disease, and as such is only passed on by mothers to offspring.

It is a slowly progressive neuromuscular disorder associated with progressive external ophthalmoplegia and heart conduction defect.

Ocular manifestations include ptosis and peripheral retinal bony spiculed appearances.

3. Any sharp ocular pain is more suggestive of corneal/ocular surface pathologies, and hence herpetic keratitis is the best answer.

4. Galactosaemia also does cause cataracts, but if the galactosaemia is treated, the cataract is reversible.

5. Inhaled steroids can cause cataracts

6. Work Smart Session - MRCP Part 1

Question: 9 of 10

Time taken: 13:36

A 42-year-old lady presented with a two week history of noticing both her eyes were skewed towards the temporal side. She denied ocular pain and headaches. Her visual acuity was 6/6 on the Snellen chart in both eyes.

She was not able to adduct both eyes, but up and down gaze was fine. She had two previous episodes of optic neuritis in the right eye. The last episode happened four months ago.

Her walking was normal, and her deep tendon reflexes were present. She also had recovered from gastroenteritis three weeks ago.

What is the most likely condition with which the patient had presented?

(Please select 1 option)

- **Chronic progressive external ophthalmoplegia**
- **Internuclear ophthalmoplegia** **Correct**
- **Miller Fisher syndrome**
- **Ocular myasthenia**
- **Parinaud's syndrome**

This is a case of wall-eyed bilateral internuclear ophthalmoplegia (WEBINO).

The history suggests a demyelinating process, and failure of ocular adduction in such cases should prompt the diagnosis of internuclear ophthalmoplegia.

7. Sickle cell disease (SCD) is associated with the 'black sunburst' - a chorioretinal scar, which is one of the commoner retinal manifestations of SCD and pathognomonic.

8. Marginal keratitis is areas of peripheral corneal infiltrates/ulcers associated with blepharitis. It classically causes an infiltrate near the limbal edge with an area of clear cornea. There may be limbal vessels growing towards the lesion/s.

It is thought to be caused by a hypersensitivity reaction to staphylococcal exotoxins from *Staphylococcus aureus* present on the lid margins in blepharitis.

Treatment involves topical steroids for the keratitis and lid hygiene advice and topical antibiotics to treat the underlying blepharitis. In severe cases oral doxycycline can also be used.

9. The answer is ethambutol, which is associated with:

- **Retrobulbar neuritis**
- **Generalised cutaneous reactions**
- **Hepatitis**
- **Peripheral neuropathy.**

The retrobulbar neuritis seen with ethambutol may be unilateral or bilateral; as such unilateral symptoms do not preclude the diagnosis.

- **Isoniazid is associated with peripheral neuropathy, skin rash and hepatitis**
- **Pyrazinamide can cause arthralgia and hepatitis.**
- **Streptomycin is associated with vestibular and auditory nerve damage.**
- **Rifampicin causes orange discolouration of secretions, and may cause hepatitis.**

10. Bilateral internal carotid artery displacement can cause binasal incongruous hemianopia if the optic nerves are compressed.

11. Rheumatoid arthritis is associated with scleritis

12. Red ragged fibres found in mitochondrial myopathy are found in Kearns-Sayre syndrome; mitochondrial myopathy, lactic acidosis and stroke-like episodes (MELAS); and Leber's optic atrophy.

13. Acute corneal hydrops occurs in advanced keratoconus, which is the most common cause of corneal ectasia.

The cornea is made of 3 main layers:

- **Epithelium**
- **Stroma**
- **Endothelium**

The transparency of the cornea is maintained by the endothelium which constantly pumps water out from the stroma.

Descemet's membrane is a specialised basement membrane which lies between the endothelium and stroma, which helps to provide structural integrity to the cornea. In acute corneal hydrops the endothelium and Descemet's membrane split which allows aqueous to enter the corneal stroma.

Stromal and epithelial oedema results in corneal opacification and formation of epithelial bullae.

Keratoconus is associated with atopic conditions (for example, asthma, hay fever, eczema) and Down's syndrome.

14. Miller-Fisher syndrome is a variant/spectrum of Guillain-Barré syndrome (GBS).

GBS is associated with *Campylobacter jejuni* infection, which can trigger this syndrome.

Miller-Fisher is classically described as a triad of

- **External ophthalmoplegia**
- **Ataxia**
- **Areflexia**

so the above history would be most in keeping with Miller-Fisher syndrome.

15. Work Smart Session - MRCP Part 1

Question: 2 of 6

Time taken: 02:06

A 37-year-old homosexual male presented to the medical take with an acute onset of reduced vision in his left eye.

Fundoscopy of the left eye revealed an extensive 'brushfire-like' lesion in the major superior temporal arcade with a large patch of white fluffy lesion mixed with extensive retinal haemorrhages.

What is the most likely diagnosis?

(Please select 1 option)

- (•) **CMV retinitis Correct**
- ( ) **Ocular histoplasmosis**
- ( ) **Syphilitic choroiditis**
- ( ) **Syphilitic neuroretinitis**
- ( ) **Tuberculous periphlebitis**

This is a classic example of *Cytomegalovirus* (CMV) retinitis secondary to human immunodeficiency virus (HIV), as is suggestive of the information given in this scenario.

Ocular histoplasmosis and syphilitic choroiditis would give a fundus picture of multiple whitish lesions.

Syphilitic neuroretinitis would normally give a picture of a macular star exudation.

Tuberculous periphlebitis is the next closest answer, but does not fit the description of 'brushfire-like' lesion in that it gives a picture of perivenous sheathing and minimal retinal haemorrhages.

16. Work Smart Session - MRCP Part 1

Question: 5 of 6

Time taken: 08:01

A 24-year-old lady with a BMI of 36 and on the combined oral contraceptive pill presented with a one month history of increasing vertex headaches, worse in the mornings and worse

on coughing and sneezing. She also complained of blurry vision in both eyes.

Fundoscopy revealed bilateral extensive papilloedema with a lot of flame shaped haemorrhages around and on the optic discs.

Which one of the following is the best long term management of this patient?

(Please select 1 option)

- (•) **Changing the combined oral contraceptive pill to an oestrogen based one** Incorrect answer selected
- ( ) **Commence on aspirin**
- ( ) **Perform lumbar puncture**
- ( ) **Reduce weight** This is the correct answer
- ( ) **Start oral acetazolamide**

This patient has idiopathic intracranial hypertension. The best long term management is weight reduction, which can improve her symptoms.

Changing the combined oral contraceptive pill to a more oestrogen based one can worsen the symptoms.

Lumbar puncture and acetazolamide can help improve the symptoms, but should not be considered as long term management.

PHARMA

1. Contraindications to anticoagulation where an IVC filter may be considered include

- **Haemorrhagic stroke**
- **Recent neurosurgery or other major surgery**
- **Major trauma and**
- **Evidence of active internal bleeding.**

Other contraindications include

- **Pregnancy**
- **Frequent falls and**
- **Poor potential compliance with warfarin.**

In these situations an IVC filter may be the most appropriate option. Given her young age and the potential for further PEs, a filter may be considered ahead of increased warfarin dose.

IVC filters may also be considered for prophylaxis in patients who have a diagnosis of cancer or who have a DVT and are about to undergo surgery. In this case, anticoagulation may result in more problems than filter placement.

A previous relative contraindication to filter placement was the need to undergo MRI, but now, MRI proof filters are available and this is no longer a problem.

www.bcshguidelines.com/documents/vena_cava_filters_bjh_2006.pdf

2. Warfarin inhibits production of factors II, VII, IX and X, and it does this by restricting the activity and availability of vitamin K. This accounts for vitamin K administration being the treatment for warfarin toxicity.

2b3a receptor inhibitors are used in the treatment of acute coronary syndrome and they inhibit platelet aggregation.

P2Y12 is an adenosine diphosphate (ADP) dependent receptor involved in platelet aggregation which is inhibited by clopidogrel.

Cyclo-oxygenase inhibition is the mechanism of action of aspirin.

Selective COX-2 inhibitors have fallen out of favour due to potential increased risk of cardiovascular events.

3. The major difference between capecitabine and 5-FU is that capecitabine is an oral prodrug of 5-FU. The final step in metabolism to 5-FU is thymidine phosphorylase, higher activity of thymidine phosphorylase occurring in tumour tissues.

4. Aprepitant is a neurokinin receptor blocker used in the prevention of chemotherapy induced nausea.

Ondansetron and granisetron are 5HT3 antagonists.

Hyoscine is an anticholinergic/antihistaminergic.

Domperidone is an antidopaminergic agent

5. The Buteyko technique controls chronic hyperventilation, as such patients perceive less symptoms of shortness of breath, and their use of short acting bronchodilators is reduced.

This does not however have any impact on lung function including FEV1 and FVC.

It may be particularly valuable in patients who complain of symptoms of shortness of breath significantly in excess of those expected when you review their lung function.

6. Moxonidine and alpha-methyl dopa are centrally acting antihypertensives and modify blood pressure through central action modifying sympathetic activity.

7. Oxybutinin is an effective treatment for detrussor instability and is a parasympathetic muscarinic antagonist. Consequently dry mouth is a problem in up to 70% of cases.

8. Capecitabine is a prodrug which is metabolised to produce 5-fluorouracil, a chemotherapeutic agent used intravenously in the treatment of cancer.

9. Corticosteroid-related psychosis is seen within a few days of starting high dose oral or intravenous corticosteroids, although some patients have been diagnosed with the condition up to 12 weeks or more after commencing therapy.

Symptoms which are seen include

- **Agitation**
- **Hypomania**
- **Suicidal intent.**

Given the close proximity of her symptoms to the onset of steroid therapy this is much more likely to be the diagnosis than cannabis or alcohol related psychiatric disorder.

10. Which of the following statements regarding Antabuse (disulfiram) is/are correct=Patients using alcohol based perfumes may develop serious reactions..

11. How does allopurinol prevent the accumulation of uric acid?= By inhibiting purine synthesis

12. Methanol causes a metabolic acidosis with an increased anion gap

13. Which term best describes the affinity of a drug for its receptor?=POTENCY.

14. class teaching the Buteyko technique. What would you advise about its success=It is associated with improved symptoms.

15. A mother brings her 3-year-old child to the casualty department because she is complaining of earache. You collect her from the waiting room where she is happily playing with toys. This is the second episode over the past year.

On examination her temperature is 37.4°C and her right ear drum is pink and bulging consistent with otitis media.

According to the SIGN national guidelines, how will you manage the child?

=Advise paracetamol and or ibuprofen to relieve her pain.

16. This patient has renal failure, a state in which drugs that are usually highly protein bound, such as phenytoin, lose some of

their affinity for protein binding. This results in increased availability of free drug at any given dose, which then increases the risk of toxicity.=so decrease protien binding of phenytoin is the most likely the cause of it is toxicity.

17. Spironolactone is well known to cause gynaecomastia due to its well described anti-androgen effects.

18. Diltiazem, as with nearly all the calcium channel blockers, causes gravitational/ankle oedema. فالعيان ميعرفش يحط الجزمه ف رجله

19. Antipsychotic medications are known to elevate prolactin levels, due to dopamine antagonist effects.

20. Calcium channel blockers and drugs like phenytoin and cyclosporin are associated with gingival hypertrophy.

PSYCHIATRY

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https://www.facebook.com/groups/mrcpuk/

I RECOMMEND TO READ IT BEFORE DOING ONEXAM !!!!

BELIVEME ME IT WILL MAKE A DIFFERENCE ….read it after studying the text and before answering the mcqeos !!!!!

0.indicative of an abnormal grief reaction=Duration longer than 12 months.

1. **permitted in a section 5(2)= Conversion to section 2 (assessment order) or 3 (treatment order) of the MHA 2007.**

2. **Which one of the following would be most consistent with a diagnosis of anorexia nervosa=She has a full-time job**

3. **This man may be frustrated by his incapacity and would appear to be having behavioural problems as a manifestation of his depression. Cannabis may actually relive these frustrations.so the cause of his behaivoral disorder is depression not cannabis.**

5. An 18-year-old man had repeated episodes of breathlessness and palpitations, lasting about 20 minutes and resolving gradually.

There were no abnormal physical signs.

What is the most likely cause of these features

=panic disorder.as SVT resolve suddenly not gradually.

6.Incongruity of affect is emotion inappropriate to circumstances. Although not one of the first-rank symptoms of schizophrenia, it is consistent with the diagnosis.

7. Clozapine is associated with agranulocytosis and granulocytopenia in approximately 1-2% of patients, which can result in fatal sepsis

8. Schizophrenia is commoner in individuals in unstable relationships

9. Globus hystericus is part of the anxiety disorders and thought to be due to somatisation. In this case a stressor is the loss of her partner and this has led to anxiety symptoms and altered sensation in her neck.حاسها ان حاجه واقفه ف زورها

10. Which of the following might be a reason for someone to be judged to lack mental capacity using the functional test of capacity (for example, as used by the Mental Capacity Act 2005)= Inability to understand the relevant information.

11. Phenothiazines have antiemetic and antipsychotic properties, making them the medication of choice for acute porphyria episodes.like Chlorpromazine.

12. The tremor, seizure and confusion should raise the possibility of lithium toxicity which is the condition that best fits this clinical picture.

13. Rapid eye movement (REM) sleep behaviour disorder, often associated with the violent re-enacting of dreams, occurs when the normal atonicity of REM sleep is lost.

14. An 82-year-old male with longstanding Alzheimer's dementia presents as his carers are concerned about his increased episodes of aggression. Physically he is well.

Which is the most appropriate treatment for his aggressive outbursts =Quetiapine.

15. Plasma testosterone levels are normal in females with anorexia.

Basal levels of TSH may be depressed in anorexia, though T4 and T3 may be normal.

16. Amphetamines are known to lead to drug induced schizophrenia

17. Carbamazepine is as effective as benzodiazepines in the acute treatment of the symptoms of alcohol withdrawal

18. not a hazard of ECT=Induction of dementia.

19. The College has asked about somatisation disorder in at least four recent examinations so they must think it is quite important.

- **Knowledge of early childhood experiences is not necessary**
- **Depression is often found so antidepressives are useful**
- **Relatives should be involved and**
- **Empathy, not persuasion, is the key to management.**

So Her progress will be slower if she thinks her doctors do not believe her..

20. This gentleman has candidiasis of his throat that may be due to his inhaler usage but given his other symptoms and history may well be secondary to HIV infection.

He has recurrent chest infections and now symptoms compatible with PCP infection (dry cough, chest pains, desaturation on exertion, normal chest examination).

The only test that will confirm this is sputum immunofluorescence.

21. This man suffers from akathisia, a well-documented side effect of dopamine blockade.so to avoid this side effect= benzodiazepines (traditionally clonazepam) have the best research evidence in combating this unpleasant side effect.

22. The history is strongly suggestive of neuroleptic malignant syndrome=raised creatine kinase (CK)..

23. Which of the following is the most useful imaging modality of the brain when investigating Lewy body dementia?=
DaTscan™ (dopamine transporter scan)..

24. This man's grandiose delusions, flight of ideas and pressure of speech fit best with a diagnosis of mania.

25. Akathisia is a typical side effect associated with the use of the atypical antipsychotic olanzapine.

Others include

- **Agranulocytosis**
- **Hyperprolactinaemia**
- **Hyperglycaemia**
- **Depression**
- **Anxiety.**

26. There is no specific treatment for tricyclic antidepressant poisoning.

500 ml of 1.26% sodium bicarbonate should be used to treat arrhythmias, hypotension and significant ECG abnormalities to a pH of 7.50-7.55 in tricyclic antidepressant overdose, even in the absence of acidosis.

27. You judge that she is at high risk of suicide.= Call the duty psychiatrist, and with other staff in the emergency department attempt to restrain her under common law until they arrive

28. Electroconvulsive therapy (ECT) would be contraindicated if he had a previous cerebrovascular accident

29. Which of the following would favour a diagnosis of dementia rather than depression=Urinary incontinence

30. disulfiram=Inhibits acetaldehyde dehydrogenase activity.and so used in ttt of alcholism.

31. Being brought up in an institution not increase risk of schizophreni.

32. Temporal lobe epilepsy may cause hallucinations mimicking schizophrenia

33. early Alzheimer's disease=Impaired short term memory.

34. true regarding depersonalisation syndrome=Is associated with depression.

35. The feeling that other people have changed is derealisation.

36. The symptoms the student describes are characteristic of stress/anxiety and are quite common.!!... قبل امتحان الزماله مثلا

She should be reassured so Arrange counselling, with relaxation training.

37. (obsessive compulsive disorder)= Patients have good insight.

38. Which of the following symptoms is more suggestive of a functional disorder=Mutism

لا تنسونا من صالح دعائكم

RHEMATOLOGY

Notes taken from onexam2013

Rhematology

By.faisal gamal hemeda

(Ain shams university)

(اعتقد ان قرائتها قبل الحل هتكون مفيده!!)

1. **In patients with cutaneous psoriasis, systemic corticosteroids predispose to pustular psoriasis, and may result in a flare of skin psoriasis when they are stopped.**
2. **The commonest subtype HLA associations are HLA B*2705 (Caucasians), B*2704 (Chinese, Japanese) and B*2702 (Mediterranean).**

3. Any patient with longstanding RA who develops proteinuria, or intractable diarrhoea, should be investigated for AA amyloidosis.

. Diagnosis therefore requires a biopsy and histological examination..Gastrointestinal (GI), rectal and subcutaneous fat biopsies are the procedures of choice GI and rectal are recommended because their sensitivities are high and they can be performed as an outpatient procedure. The incidence correlates strongly with renal biopsy,

4.mechanism of action of the bisphosphonates Inhibition of osteoclast activity

5. This elderly patient presenting with bone pains has elevated alkaline phosphatase with normal calcium concentrations suggesting a diagnosis of Paget's disease.

6. Regarding Paget's disease:

- **Increased bone turnover gives disordered bone formation, abnormal remodelling and deformity**
- **Typically affects elderly patients**
- **Can be asymptomatic**
- **Symptoms include deafness, bone pain, breathlessness due to high-output cardiac failure (rare) and nerve compression**
- **Complications include pathological fractures and there is a small risk of developing osteosarcoma.**

Treatment is with bisphosphonates and analgesia.

7. Pneumonitis is a well-recognised and potentially fatal hypersensitivity reaction associated with methotrexate. It is far less predictable than other side effects associated with the drug. Typical symptoms include progressive dyspnoea, cough and fever. On examination, patients are typically hypoxic and tachypnoeic and there may be audible crackles on chest auscultation. Chest radiographs reveal interstitial or alveolar infiltrate, concentrated within the lower lung fields. Spirometry demonstrates a restrictive pattern with reduced

diffusion capacity. Lung biopsy is not specific but often reveals cellular interstitial infiltrates, granulomas or diffuse alveolar damage with pervascular inflammation

8. primary Sjögren's syndrome (occurs alone and more likely to have positive anti-Ro SSA antibodies than secondary Sjogren's).

9. Cryoglobulins are immunoglobulins which precipitate in the cold. They can be

- **Type I (monoclonal)**
- **Type II (mixed monoclonal and polyclonal) or**
- **Type III (polyclonal).**

Type I cryoglobulinaemia is associated with haematological diseases such as myeloma and Waldenstrom's.

Type II and type III cryoglobulinaemia can be associated with many connective tissue disorders, chronic infections and most importantly, hepatitis C infection which should always be excluded.

Treatment of cryoglobulinaemia would include plasmaphoresis, high dose steroids and cyclophosphamide.

10. Learning points:

- **Define and recognise histological and radiological properties of amyloid**
- **Understand the basic nomenclature of amyloidosis**
- **Common clinical association of AL amyloid.**

Amyloidosis, as a clinic-pathological descriptor is used to denote the in vivo, extracellular deposition of material (amyloid) characterised by the following properties:

1. **Electron micrography - fibrillar appearance**
2. **x Ray diffraction pattern - beta pleated sheet structure**
3. **Haematoxylin and eosin staining - amorphous eosinophilic appearance**
4. **Congo red histological staining - apple-green birefringence**
5. **Solubility in water and buffers of low ionic strength.**

All types of amyloid consist of an insoluble major fibrillar protein (more than 27 unrelated proteins in humans) that defines the type of amyloid.

This patient has probably developed AL (light chain; formerly primary amyloidosis) amyloid in association with her underlying multiple myeloma, where the precursor protein is a clonal immunoglobulin light chain or light chain fragment.

11. About 50% of patients with GCA also have PMR, and about 10% of those with PMR also have GCA. 20% of patients develop loss of vision, which can be prevented with timely recognition and treatment.

12. Current BSR guidelines recommend: for GCA
• Uncomplicated GCA (no jaw or tongue claudication, or visual

symptoms): prednisolone 40-60mg daily
• Complicated GCA:
- Evolving visual loss or history of amaurosis fugax: IV methylprednisolone 500mg-1g daily for three days, followed by oral corticosteroids
- Established visual loss: at least 60mg prednisolone daily
Bone protection and proton-pump inhibitors should be co-prescribed.
It is important to note that the pathological findings of giant cell arteritis persist for one to two weeks following initiation of corticosteroid, and therefore treatment should not be delayed to obtain a biopsy.
Aspirin 75mg once daily is sometimes given as an adjunct but higher doses are not recommended.

Symptoms usually resolve quickly, often with two or three days. Once they and laboratory abnormalities resolve, the dose of corticosteroid can be reduced and usually stopped within two years. The patient should be monitored for recurrence throughout the taper: ESR every 4 weeks for 2-3 months, then every 8-12 weeks until 12-18m after cessation of therapy.
Giant cell arteritis is a medical emergency and should be treated without delay. It is not acceptable to give no treatment

13. The presence of bilateral hilar adenopathy in someone with erythema nodosum-like lesions, fever and weight loss suggests the diagnosis of sarcoidosis.

14. Histologically, a number of different types of renal disease are recognised in SLE, with immune-complex mediated glomerular disease being the most common.

The standard classification divides these into five different patterns:

I - No disease
II - Mesangial
III - Focal proliferative
IV - Diffuse proliferative(most coomon and most severe)
V - Membranous.

15. Anti-Ro, and anti-La antibodies cross the placenta, and cause fetal AV nodal conduction defect, which may progress to complete heart block. This may be complicated by CCF, and hydrops fetalis.

Neonatal lupus presents as erythematous macular rash on face or trunk, which may be photosensitive.

Permanent pacemaker is required for the treatment of complete heart block.

On the other hand, neonatal lupus is a transient self-resolving illness due to passively transmitted maternal antibodies.

16. Septic arthritis must be excluded in an individual with acute mono-arthritis.

Septic arthritis may be oligo- or polyarticular in the immunosuppressed, and may present without pyrexia. Joint

aspiration, followed by microscopy and culture of the synovial fluid is critical to the diagnosis of septic arthritis.

17. Rheumatoid arthritis is the most common inflammatory disease involving the spine. It has a predilection for the craniocervical spine.

The three different patterns of instability which can result are:

- **Atlantoaxial subluxation(pt complain of pyramidal signs/new onset of occiptal headache)**
- **Atlantoaxial impaction and**
- **Subaxial subluxation.**

18. has a role in the treatment of osteoarthritis (OA)= Transcutaneous electrical nerve stimulation

19. A. The prostaglandin iloprost is useful in the treatment of Raynaud's phenomenon and can be considered if the patient does not respond to nifedipine Retard or has developed digital ulceration or ischaemia.

C. Raynaud's phenomenon responds well to calcium channel blockers such as nifedipine but given that this lady has so many factors that can be altered in her lifestyle, such as smoking and working in a cold environment, more simple measures to change these could avoid daily medication with its side effects.

D. Digital sympathectomy should be considered as a last resort when drug therapy has failed or has not been tolerated.

E. Capillaroscopy is useful especially when serum antibodies are positive but it would not change the management at this stage.

20. Lateral epicondylitis=This patient has symptoms that are consistent with tennis elbow, most probably due to excessive forearm extension as a result of his work as a carpenter.

Many will improve with rest and avoiding any movement that causes pain. Physiotherapy is the mainstay of therapy, and many patients benefit from exercises, placement of a tension band device around the elbow and use of non-steroidals.

In those who do not respond to physiotherapy, a lateral release procedure is highly effective.

21. Fibromyalgia is becoming a recognised medical diagnosis, and is based on the presence of pain in all four quadrants of the body, as well as tenderness in 11 of 18 anatomically defined trigger areas. The aetiology is not fully understood, but may involve hyperexcitability within the spinal cord or brainstem, altered pain perception and somatisation.

Approximately 50% of patients with fibromyalgia complain of diarrhoea and constipation, often associated with abdominal bloating. Morning fatigue is present in a large proportion of these patients, and patients often look unwell, and may appear depressed and anxious. Other features include tissue swelling, morning stiffness and sleep disorders.

Somatoform disorders are a group of psychological disorders in which a patient experiences physical symptoms despite the absence of an underlying medical condition that can fully explain

their presence. The clinical picture here is too close to that of fibromyalgia to be a somatoform disorder.

Depression should be a diagnosis of exclusion, and fibromyalgia is a more likely diagnosis here. If the patient had hypothyroidism you would expect other features in the history, such as cold intolerance. Schizophrenia would not explain the clinical findings in this case.

22. Cervical spondylosis is the most common progressive disorder of the spine, and is associated with normal aging. It results from degeneration of the intervertebral discus and facet joints in the cervical spine. Radiographic evidence of disc degeneration is present in 25% of patients younger than 40y, 50% over 40 and 85% over 60. In the majority of cases it is asymptomatic, and it is difficult to define the boundary between normal aging and the disease process. Risk factors include rugby, horse-riding and flying, all of which increase loads on the head. Both sexes are affected equally, but problems begin earlier in males.

Degenerative changes affecting the intervertebral discs, vertebrae, facet joints, and ligamentous structures encroach on the cervical spinal canal and damage the cord, especially in patients with a congenitally small canal.
Symptoms related to myelopathy and radiculopathy are caused by the formation of osteophytes, which narrow the diameter of the spinal canal at one or multiple levels. This may produce direct neurological damage or ischaemic changes and therefore lead to spinal cord disturbances. Radiculopathy is due to compression, stretching or angulation of the cervical nerve roots. Myelopathy is due to compression, ischaemia or recurring minor trauma to the cord. Cervical spondylitic myelopathy is the most common cause of myelopathy in adults. Patients present

with signs and symptoms of cervical spinal cord dysfunction with or without cervical nerve root injury. There is therefore a mixture of upper and lower motor neurone signs. These may or may not be accompanied by pain in the neck and/or upper limb, orbits or temporal regions. In addition there is often cervical stiffness, and poor balance. On examination there is limited range of movement of the cervical spine and poorly localised tenderness.
Radiculopathy causes dermatomal pain, often with accompanying changes in sensation or weakness in related muscles. The most commonly affected nerve roots are C5-7, and sensory symptoms (shooting pain, numbness, hyperaesthesia) are more common than weakness. Dural irritation can be demonstrated with the Spurling test in which radicular pain is reproduced with lateral flexion and rotation of the neck, with pressure on top of the patient's head. Reflexes are usually reduced.

The differential diagnosis is broad, and includes acute neck strain, osteomyelitis, fibromyalgia, inflammatory arthritis and osteoporosis. The diagnosis can often be made on clinical grounds, but if neurological abnormality is present appropriate investigations include MRI and electrophysiology. High signal-intensity lesions on MRI indicate a poor prognosis.
Management can be medical or surgical. Initially conservative measures such as regular activity, physiotherapy and addressing risk factors should be instigated. A cervical collar should not be used. Analgesia, anti-inflammatories and tricyclic antidepressants can be helpful. Indications for surgery include progressive neurological defects, compression of the cervical nerve root and/or spinal cord and intractable pain. Decompression improves neurologic function in some patients and prevents worsening in others, but there are significant risks.

Epidural injection can be considered where surgical intervention is not an option.

In general, progression of cervical spondylosis is slow, although 10% develop chronic neck pain.

Motor neurone disease is an important differential diagnosis of upper and lower motor neuron dysfunction in this age group. It is slightly more prevalent in men than women. However, you would expect muscular weakness to be the predominant symptom and this is only minor in the above case. Sensory disturbance is uncommon.

Myeloma can cause spinal cord and or nerve/root compression but one would expect other features to be present such as bone pain, bleeding or bruising and symptoms of hypercalcaemia. Blood tests typically show anaemia, leucopenia and thrombocytopeania, none of which are present in this case.

Polymyalgia rheumatica is an inflammatory disorder characterised by severe bilateral pain and morning stiffness of the neck, shoulder and pelvic girldle. The ESR and CRP are markedly raised, and neurological signs are uncommon.

In syringomyelia there is a fluid-filled cavity within the central spinal cord (usually cervical). As this enlarges and expands it compresses the corticospinal and spinothalamic tracts, and later the anterior horn cells. Sensory symptoms are therefore a dominant feature. It most commonly presents in the 20s and 30s.

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23. a percutaneous needle biopsy of the kidney be most helpful and appropriate=Systemic lupus erythematosus (SLE) and acute renal failure

24. Rheumatoid factor is an antibody with reactivity to the heavy chain of IgG.

25. Iritis is associated with conditions such as Reiter's, Behcet's, psoriatic arthropathy (about 20%) and inflammatory bowel disease.

26. Macroglobulins are plasma globulins of high molecular weight. They are a central feature of Waldenstrom's macroglobulinaemia,

27. Macroglobulins are not typically a feature of multiple myeloma.

28.mm=Bence Jones protein ○ Decreased resistance to infection ○ Infiltration of flat bones by plasma cells ◉ ○ Monoclonal gammopathy

29. HAO is characterised by deficiency of C1 esterase inhibitor.

This leads to persistent activation of the classical complement pathway and C4 levels are frequently low secondary to activation and consumption.

If treatment fails to normalise the C4 levels and they remain persistently low, these patients are at an increased risk of developing SLE.(hereditary angioneuroyic oedema).

30. Learning points:

- **Treatment modalities for the primary prevention of osteoporosis in postmenopausal women**
- **Risk factors for the development of osteoporosis in postmenopausal women.**

This is a 69-year-old lady with two independent clinical risk factors for fracture (rheumatoid arthritis, alcohol intake greater than 4 units per day) and a correspondingly low T-score.

These factors make her eligible for primary prevention with a bisphosphonate. Bisphosphonate therapy is relatively contraindicated however, given her history of gastric ulcer perforation and ongoing alcohol abuse. More, it is doubtful that she would comply with the special instructions relating to the administration of a bisphosphonate.

For these reasons, current NICE guidance recommends denosumab[i], a monoclonal antibody targeted against the nuclear factor-kappa ligand (RANKL) involved in osteoclast activation.

Raloxifene[ii] is not recommended for the primary prevention of osteoporotic fragility fractures in postmenopausal women.

30. Learning points:

- **Bone mineral density (BMD) measurement in premenopausal women**
- **Risk factors for low BMD in premenopausal women**
- **Definition of fragility fracture.**

The scoring systems are differentiated by their reference populations:

- **T-scores compare the patient's bone mineral density (BMD) with that of a healthy young adult**
- **Z-scores compare the individual's BMD with that of a population of peers.**

Accordingly the T-score is validated for use in peri/post menopausal women and men aged over 50 years.

The relationship between BMD and fracture risk is not well established in premenopausal women and a Z-score is utilised instead.

This fracture is suspicious of a fragility state because it has resulted from a mechanical force equivalent to a fall from

standing height, which should not ordinarily cause a fracture. This result should prompt a search for osteoporotic risk factors.

31. Teaching points:

- **Recommendations for biologic therapy in rheumatoid arthritis (RA)**
- **Absolute contraindications to biologic therapy**
- **Basic disease scoring in RA.**

This lady has a DAS-28 score persistently greater than 3.2 and has failed on a combination of more than two disease modifying agents, thus fulfilling the criteria for consideration of anti-TNF (biologic) therapy.

Absolute contraindications to this therapy include

- **Active or latent mycobacterial infection**
- **Patients with New York Heart Association (NYHA) grade 3 or 4 cardiac failure**
- **Multiple sclerosis[i].**

In addition, anti-TNF therapy should be used with caution in other demyelinating diseases including Guillain-Barre syndrome, Miller Fisher syndrome and chronic inflammatory demyelinating polyneuropathy.

32. Transcutaneous electrical nerve stimulation is recommended by NICE as a supplement to analgesia in osteoarthritis (OA).

33. A. In general, SLE does not affect the fertility of patients. However, fertility may be adversely affected in specific subgroups of patients such as those with renal failure,

cyclophosphamide treatment, very active disease or high dose corticosteroids.

B. Anti-Ro and anti-La antibodies are associated with increased risk of congenital heart block. The risk is greater with anti-Ro positivity than anti-La positivity. The risk of congenital heart block in the presence of anti-Ro may be up to 5%.

C. Stopping any unnecessary drugs is advisable in pregnancy, however use of azathioprine, hydroxychloroquine and prednisolone in pregnancy is considered safe if these are necessary for treatment of the mother's disease.

D. Prednisolone and hydroxychloroquine may be taken whilst breast-feeding. Azathioprine, cyclophosphamide, methotrexate and cyclosporin A are contraindicated in breast-feeding mothers.

E. Risk of pre-eclampsia is increased in SLE. It may be difficult to differentiate between pre-eclampsia and renal flare of SLE, and both may coexist. Differentiating features include raised anti-dsDNA antibody, decreased complement levels (C3 and C4) and response to steroids in the case of renal flare.

34. acute onset monoarthritis.= . Joint aspiration and analysis of synovial fluid for Gram stain, microscopy and culture

35. Bacteria are the most common cause of monoarthritis.

Staphylococcus aureus **and gonococci are the most common causes of septic arthritis.**

36. The most likely cause for this acute presentation is disseminated gonorrhoea - with a pustular rash on the dorsum of his foot, fever, urethritis and oligoarthritis.

37. acute sarcoidosis with erythema nodosum, polyarthropathy and hilar lymphadenopathy.

This has a good prognosis and usually resolves spontaneously over six to eight weeks.

38.

Work Smart Session - MRCP Part 1

Question: 30 of 30

Time taken: 40:48

A 23-year-old female presents with left knee pain and a two month history of weight loss.

She has a good appetite but has had occasional episodes of diarrhoea over this time and tends to pass a loose motion at least twice daily. She is not taking any medication and there is a family history of hypothyroidism. She is a non-smoker and drinks modest quantities of alcohol.

Examination reveals a swollen, tender left knee joint with a small effusion.

Which is the most likely diagnosis?

(Please select 1 option)

- Behcet's disease
- Inflammatory bowel disease Correct
- Reactive arthritis
- Thyrotoxicosis
- Tuberculosis

The description of weight loss, diarrhoea and a mono/oligo-arthropathy suggests a diagnosis of inflammatory bowel disease. (IBD).

IBD-associated arthropathy is considered a subtype of seronegative spondyloarthropathy. A variety of joint involvement has been described, from large joint pauciarticular arthropathy to a rheumatoid pattern polyarthropathy.

Peripheral arthritis is generally non-erosive and the oligoarticular variant particularly may correlate with intestinal disease activity.

Axial arthritis may include inflammatory back pain, sacroilitis, or ankylosing spondylitis and is less likely to correlate with gastrointestinal symptoms. Whilst there have been genetic factors identified, the mechanisms surrounding the development of arthritis in IBD remain unclear. Treatment of the gastrointestinal disease is not always sufficient for control of arthritis, and biologic agents may be indicated.

39. Work Smart Session - MRCP Part 1

Question: 1 of 10

Time taken: 01:41

A 64-year-old woman with a history of rheumatoid arthritis comes to the clinic for review.

She is taking weekly methotrexate to control her rheumatoid and is concerned as she has had two episodes of pneumonia over the past nine months.

On examination her BP is 122/72 mmHg, pulse is 75 and regular. There are occasional crackles on auscultation of the chest, and evidence of active rheumatoid on examination of the small joints of the hands.

Investigations show:

Haemoglobin	**11.4 g/dl**	**(11.5-16.0)**
White cell count	**8.8 x 10^9/l**	**(4-11)**
Platelets	**182 x 10^9/l**	**(150-400)**
Sodium	**139 mmol/l**	**(135-146)**
Potassium	**3.9 mmol/l**	**(3.5-5)**
Creatinine	**118 micromol/l**	**(79-118)**

CXR - Nodular changes, unchanged over the past two years.

Which of the following is the most appropriate management with respect to her chest disease?

(Please select 1 option)

- ○ **Add infliximab**
- ○ **Add low dose prednisolone**
- ○ **Decrease methotrexate dose**
- ○ **Increase methotrexate dose**
- ◉ **Observation** **Correct**

Rheumatoid nodules are commonly associated with the disease. They may occasionally be associated with increased risk of respiratory tract infection. Given the appearance on chest x ray has not changed over the past two years, no intervention is required.

An increase or a decrease in antirheumatoid medication is not necessarily indicated by the presence or absence of rheumatoid nodules. They are typically benign but can lead to pleural effusion, pneumothorax, haemoptysis, secondary infection, and bronchopulmonary fistula.

40. The presence of anti-Sm antibodies is more specific for SLE than the other options.

41. Methotrexate may be associated with haematopoietic suppression, leading to profound and sometimes sudden leucopenia and thombocytopenia.

42. Work Smart Session - MRCP Part 1

Question: 7 of 10

Time taken: 07:57

A female presents with headache, lethargy and weight loss.

Which of the following would make the diagnosis of giant cell arteritis (GCA) unlikely?

(Please select 1 option)

- **A normal ESR**
- **Bilateral headache**
- **Non-tender temporal arteries**
- **Papilloedema without visual loss** **This is the correct answer**
- **The patient is 50-years-old** **Incorrect answer selected**

Patients are usually elderly with a typical age of 70 but not exclusively so.

The temporal arteries are usually tender but they may be non-tender.

Similarly there is usually a unilateral headache but often presents as bilateral headache.

Erythrocyte sedimentation rate (ESR) is typically elevated but a normal ESR is well recognised.

However, papilloedema without visual loss would suggest raised intracranial pressure.

One would expect visual loss with anterior ischaemic optic neuropathy in GCA.

43. Learning points:

- **Potential complications of anti-TNF use in rheumatoid arthritis**
- **Clinical presentation of *Pneumocystis jiroveci* (PCP).**

This patient has developed *Pneumocystis jiroveci* (formerly *Pneumocystis carinii*) pneumonia after commencing anti-TNF therapy[i], a known risk factor.

The temporal relationship, dry cough, fever, weight loss and inducible post exertional hypoxia should point you towards this diagnosis.

Anti-TNF therapy also predisposes mycobacterial infection and this must be excluded before commencing treatment[ii].

Her radiograph and a clinical history of 2 kg weight loss in two months (insignificant value) are not consistent with this diagnosis.

44. Oral glucocorticoids are associated with significant increase in fracture risk from doses as low as 5 mg daily. Loss of bone mineral density is greatest in the first few months of glucocorticoid therapy, but fracture risk declines rapidly after stopping. There is an increased risk of fracture over and above the effect of low bone mineral density.

Patients older than 65 years are considered at high risk of osteoporotic fractures, as are those with a prior fragility fracture, and they should commence on bone protective therapy at the time of starting glucocorticoid therapy.

Measurement of bone density is not required before starting therapy. In patients younger than 65 years without risk factors, DEXA scan is recommended for assessment of fracture risk.

General measures to reduce bone loss include use of the lowest dose of glucocorticoids possible, and steroid-sparing agents. Dietary calcium should be increased and physical activity, with smoking and alcohol minimised. Daily intake 1,500 mg of calcium and 800U of vitamin D3 is recommended.

Bone protective therapy which can be used includes alendronate, alfacalcidol, calcitonin, calcitriol, cyclic etidronate and risedronate.

45. Work Smart Session - MRCP Part 1

Question: 7 of 30

Time taken: 14:13

An 84-year-old man presents with right upper arm pain which he has had for the last few months. The pain is worsening progressively, and wakes him up at night.

He is known to have Paget's disease involving lumbar spine and pelvis, and is on oral bisphosphonates for this. There is no history of injury.

On examination the shoulder movements are free, and normal.

What is the most likely cause of his arm pain?

(Please select 1 option)

- ○ **Fracture**
- ○ **Osteoarthritis**
- ○ **Osteonecrosis**
- ○ **Osteosarcoma** **This is the correct answer**
- ◉ **Paget's disease** **Incorrect answer selected**

Osteosarcoma is the most likely cause of his arm pain.

Osteosarcoma occurs in 1% of patients with Paget's disease, and accounts for 30% of cases of late onset osteosarcoma.

Although Paget's disease is associated with pathological fracture at the affected site, this man is not known to have Paget's disease at the humerus - which is an uncommon site for Paget's disease anyway; and there is no history of injury.

Similarly, the speed of progression of symptoms, presence of night pain and normal joint movements precludes the diagnosis of osteoarthritis.

Osteonecrosis has been associated with intravenous bisphosphonates (for example, zoledronic acid), and although rare, occurs in cancer patients who may be treated with large doses of corticosteroids, or who are known to have bone metastases.

46. Work Smart Session - MRCP Part 1

Question: 8 of 30

Time taken: 17:05

A 55-year-old lady presents with swelling, increased sweating, persistent erythema, and increased pain sensitivity in her right hand, and forearm for the last few months.

She had a right Colles fracture four months ago, and has been discharged from orthopaedics with good fracture healing.

On examination, the affected limb is swollen, erythematous, sweaty and there is increased pain sensitivity on the affected side. Fine touch is perceived as painful. Recent blood tests have been normal.

What is the diagnosis?

(Please select 1 option)

- ○ **Cellulitis**
- ○ **Complex regional pain syndrome type I This is the correct answer**
- ○ **Complex regional pain syndrome type II**
- ○ **Deep vein thrombosis**
- ◉ **Osteomyelitis Incorrect answer selected**

This patient has complex regional pain syndrome (CRPS) which is a chronic pain condition that can affect any area of the body, but often affects an arm or a leg, and occurs after an injury or rarely after a sudden illness such as a heart attack or stroke.

The condition can sometimes appear without obvious injury to the affected limb.

CRPS has two forms:

- **CRPS I occurs in the absence of a preceding nerve injury**
- **CRPS II is caused by an injury to the nerve.**

The key symptom is pain that

- **Is intense and burning**
- **Is disproportionate to the original injury**
- **Is worse over time**
- **Spreads beyond the site of injury and**
- **Is associated with hyperalgesia, hyperpathia or allodynia on examination. These features do not occur in DVT, osteomyelitis, or cellulitis.**

CRPS may have three stages (acute, dystrophic, and atrophic), with variable progression from one stage to another.

CRPS is a clinical diagnosis, and various imaging modalities show non-specific changes which support its diagnosis:

- **Plain radiographs may show soft tissue swelling, peri-articular osteoporosis, and rarely erosions**
- **MRI may also show bone marrow oedema apart from these changes**
- **99mTc bone scan shows hypervascularity in the acute phase, and hypovascularity in the atrophic phase.**

In the atrophic phase, imaging may show contractures.

47. In the circumstances of infection one should consider temporarily stopping methotrexate as it is an immunosuppressant.

Any infection should be treated as usual and the response to treatment monitored. Once the infection has been successfully treated methotrexate can be reinstated.

48. Methotrexate is teratogenic and, according to the British National Formulary (BNF), the manufacturers advise effective contraception during and for at least three months after stopping methotrexate

The National Patient Safety Agency (NPSA) state on their patient held record that "It is recommended that men wait six months after finishing their treatment, before trying to father a child as sperm can be affected".

49. There is an association between myasthenia gravis and thyroid disease, pernicious anaemia, systemic lupus

erythematosus and rheumatoid arthritis. The condition is more common in women with a peak incidence around the age of 30. It is characterised by weakness and fatigability of the proximal limb muscles, ocular and bulbar muscles.

Seventy five per cent of patients initially complain of ocular disturbance, mainly ptosis and diploplia. Reflexes are initially preserved but may be fatigable

50. Studies have shown that paracetamol 1 g combined with codeine at dose of 60 mg have the best analgesic outcomes.(if less than that =less response to ttt).

51. This elderly woman has a very raised IgM level, pancytopenia, Raynaud's phenomenon and a foot ulcer.

The most likely diagnosis here is Waldenström's macroglobulinaemia (WM). WM refers to a condition that presents in the seventh or eighth decade of life.

It is characterised by the presence of a high level of a macroglobulin (immunoglobulin M [IgM]), elevated serum viscosity and the presence of a lymphoplasmacytic infiltrate in the bone marrow, resulting in pancytopenias.

Raynaud's phenomenon may herald the onset of this condition and is due to cryoglobulinaemia.

The monoclonal IgM causes

- **Hyperviscosity syndrome**
- **Cryoglobulinaemia types 1 and 2**
- **Coagulation abnormalities**
- **Polyneuropathies**

- **Cold agglutinin disease and anaemia**
- **Primary amyloidosis**
- **Tissue deposition of amorphous IgM in skin, the gastrointestinal tract, kidneys, and other organs.**

The other conditions described here are not commonly associated with WM, and are more often seen in combination with myeloma. Erythema repens gyratum is a skin rash thought to be a paraneoplastic process.

52. Work Smart Session - MRCP Part 1

Question: 22 of 30

Time taken: 39:39

A 42-year-old female with a recent diagnosis of systemic sclerosis, is referred to hospital with a complaint of headaches and blurred vision. She has a medical history of asthma.

On examination, her blood pressure is 230/120 mmHg and there is bilateral papilloedema.

Which of the following medications should be prescribed immediately?

(Please select 1 option)

- ○ **IV furosemide**
- ○ **IV labetolol**
- ○ **IV sodium nitroprusside**
- ◉ **Oral enalapril Correct**
- ○ **Sublingual nimodipine**

Systemic sclerosis is a systemic disorder characterised by skin thickening due to the deposition of collagen in the dermis. Adverse prognostic features are renal, cardiac or pulmonary involvement.

A major complication is the development of scleroderma renal crisis. This is characterised by the abrupt onset of severe hypertension, usually with retinopathy, together with rapid deterioration of renal function and heart failure.

In addition patients may present with headaches, fever and malaise. It develops in 5-10% of patients with diffuse systemic sclerosis especially associated with diffuse cutaneous or rapidly progressive forms of systemic sclerosis, and patients in whom a high dose of corticosteroid has been started.

Renal crisis is linked with a positive ANA speckled pattern, anti-RNA polymerase I and II antibodies and absence of anti-centromere antibodies[1].

It usually presents early, within four years of diagnosis. The pathogenic mechanisms leading to renal damage are not completely understood but they involve endothelial cell damage and intimal thickening of the renal arteries, resulting in hyperplasia of the juxtaglomerular apparatus and increased renin release[1]. Renal biopsy is not necessary in patients presenting with classical features of renal crisis[2].

The clinical presentation is typically with the symptoms of malignant hypertension:

- **Headaches**
- **Hypertensive retinopathy associated with visual disturbances**

- **Seizures**
- **Heart failure and pulmonary oedema.**

Renal function is impaired and usually rapidly deteriorates. The hypertension is almost always severe with a diastolic BP over 100 mmHg in 90% of patients. There is hypertensive retinopathy in about 85% of patients with exudates and haemorrhages and if severe, papilloedema There may also be microangiopathic haemolytic anaemia, thrombocytopenia and raised renin levels.

Scleroderma renal crisis is a medical emergency. Aggressive treatment is required to prevent the occurrence of irreversible vascular injury. First line treatment is a gradual reduction in blood pressure (10-15 mmHg per day) with an ACE inhibitor until the diastolic pressure reaches 85-90 mmHg. This approach leads to a response in 90% of patients by reversing the angiotensin-II mediated vasoconstriction.

An abrupt fall in blood pressure should be avoided as it can further diminish renal perfusion and increase the risk of acute tubular necrosis. Therefore, parenteral antihypertensive agents (for example, intravenous nitroprusside or labetolol) should be avoided.

Calcium channel blockers, usually nifedipine, may be added where there is inadequate reduction of blood pressure with ACE inhibitors alone. .Additional oral hypotensive agents (for example, labetolol) can be used if required, and if pulmonary oedema is present a nitrate infusion may be indicated. There is anecdotal evidence that intravenous prostacyclin helps the microvascular lesion without precipitating hypotension, and this is used in some UK centres.

Deterioration in renal function can be rapid, with gross pulmonary oedema; therefore patients with scleroderma renal crisis should be managed in hospitals with facilities for dialysis.

Early aggressive treatment with ACE inhibitors has improved prognosis in renal crisis, although 40% of patients will require dialysis and mortality at five years is 30-40%[1]. Median time to recovery is one year, and typically occurs within three years[1]. Prognosis is worse for males[1]. Patients who need dialysis for more than two years can be considered for renal transplantation[2]. The recurrence rate has been estimated to be approximately 20%.

Care should be taken not to confuse scleroderma renal crisis with malignant hypertension. Malignant hypertension is a clinical syndrome characterised by marked elevation of blood pressure, with widespread acute arteriolar injury[4]. It has a number of different causes and treatment differs depending on the underlying condition. The pathogenesis overlaps, but idiopathic malignant hypertension tends to involve the smaller vessels than in scleroderma renal crisis[5]

53. Celecoxib has a lower level of anti-platelet activity than naproxen

54. Celecoxib is a selective cyclo-oxygenase(COX)-2 inhibitor differing from the other non-steroidal anti-inflammatory drugs (NSAIDs) such as naproxen which affects both COX-1 and COX-2.

COX-1 is involved in platelet aggregation and inhibition of this by the NSAIDs produces its beneficial cardiovascular effects. However platelet aggregation is not affected by COX-2.

Naproxen and celecoxib have been shown to be as effective at reducing inflammation. One of the benefits of celecoxib is its reduced incidence of upper gastrointestinal side effects.
As with the non-specific NSAIDS, hepatotoxicity may occur with the COX-2 specific inhibitors resulting in cholestatic, hepatocellular or mixed liver injury. Rates seem to be comparable between the traditional NSAIDs and the COX-2 selective inhibitors.

Co-administration of diuretics and COX-2 inhibitors should be avoided if possible, as COX-2 inhibitors may reduce the antihypertensive and diuretic effects of diuretics. This may be due to impaired prostaglandin synthesis, which results in salt and water retention. In addition, COX-2 inhibitors have nephrotoxic effects which can be exacerbated by diuretics.

Rofecoxib (Vioxx) has been withdrawn due to its increased cardiovascular events compared with naproxen. The cardiovascular effects of the COX-2 inhibitors remains under study, and care should be taken before prescribing them to patients with a past medical history of significant cardiovascular disease.

55. The combination of back pain, weight loss and osteosclerotic lesions makes prostatic adenocarcinoma the most likely diagnosis in this case.

56. *Salmonella* osteomyelitis is seen in patients with sickle cell anaemia

57. Learning points:

- **Bone mineral density measurement**
- **Indications for bisphosphonate prophylaxis with glucocorticoid therapy**
- **Specific bisphosphonate pharmacotherapy.**

This lady has three independent risk factors for the development of osteoporosis (coeliac disease, previous fragility fracture, long term glucocorticoid therapy).

In the context (long term glucocorticoid therapy), due to her previous fragility fracture and irrespective of her age, this patient should be commenced on bisphosphonate therapy without the need for bone mineral density quantification with DEXA scanning.

Indications for bisphosphonate prophylaxis in glucocorticoid use for a period > 3 months

<65 years	>65 year
+ fragility fracture* + T score > -1.5	All patients

NB: if T score 0 to -1.5 repeat in 1-3 years.

*** fragility fracture - defined by The World Health Organisation as resulting from a mechanical force equivalent to a fall from standing height or less which should not ordinarily cause a fracture.**

58. Learning points:

- **Presentation and triggers of Raynaud's phenomenon (RP)**
- **Clinical evaluation of RP**

- **Characteristics suggestive of secondary RP**
- **Connective tissue disease causes of RP.**

This young woman gives a history consistent with Raynaud's phenomenon and has a positive family history of rheumatological disease.

Nailfold capillaroscopy is performed by applying a drop of oil onto the periungual region of the nail and using an ophthalmoscope set to 40 diopter to examine.

Observation of a relative paucity of capillary loops or enlarged and distorted loops is positively predictive[i,ii] of an underlying connective tissue disorder (for example, rheumatoid arthritis, mixed connective tissue disease, polymyositis, dermatomyositis, Sjögren's syndrome).

Finger systolic pressure and digital artery closing temperature are laboratory investigations for other potential secondary causes.

Cold water challenge is a provocation test that is no longer recommended as responses are inconsistent even in those with established RP.

59. Learning points:

- **Presentation of mixed cryoglobulinaemia (MCG)**
- **Risk factors for (MCG)**
- **Haematological profile of MCG.**

This patient presents with palpable purpura, arthralgia and myalgia (that is, Meltzer's triad)[i] seen in cryoglobulinaemia (types II/III).

The diagnosis is made using historical accounts, skin purpura, hypocomplementaemia and demonstration of circulating cryoglobulins.

Type II (mixed essential) cryoglobulinaemia is closely associated with persistent hepatic infection (transaminitis, inferred IVDU) most commonly hepatitis C and to a lesser extent hepatitis B.

Management involves treating the underlying cause in the absence of any immediate life, organ or limb threatening complications. In this case with pegylated interferon alpha and ribavirin[ii].

60. Learning points:

- **Core inclusion criteria for polymyalgia rheumatica (PMR)**
- **Exclusion criteria for PMR**
- **Common differentials of PMR.**

The other four answers form part of The British Society for Rheumatology core inclusion criteria for diagnosing polymyalgia rheumatica (PMR).

The core exclusion criteria include any evidence of activity in the following;

- **Infection**
- **Cancer or**
- **Giant cell arteritis.**

Factors which reduce the probability of PMR include:

- **Other inflammatory rheumatic disease**
- **Drug-induced myalgia**
- **Chronic pain syndrome**

- **Endocrine disease and**
- **Neurological conditions, for example, Parkinsons[i].**

61.RA=most appropriate first step in her long term management=Disease modifying antirheumatic drugs

62. Work Smart Session - MRCP Part 1

Question: 14 of 30

Time taken: 23:11

A 52-year-old woman presents with increasing lower back pain for the last six months. The pain is increased by working as a floor-layer, and is worse in the evening.

There is no weight loss, night pain, or fever. Her back is stiff for 15 minutes in morning.

Over the last few months she has developed firm to hard swelling on several distal and proximal interphalangeal joints, and has anterior knee pain worsened by climbing stairs. A full blood count, ESR, and CRP done by the GP have been normal.

What is the diagnosis?

(Please select 1 option)

- ○ **Ankylosing spondylitis**
- ○ **Discitis**
- ◉ **Generalised osteoarthritis** **Correct**

- **Metastasis**
- **Osteoporosis**

This patient has generalised osteoarthritis (GOA), as there are OA related symptoms in at least three joint areas, namely

- **Bony swellings at distal and proximal IPJs termed Heberden's and Bouchard's nodes respectively**
- **Anterior knee pain, worse on climbing stairs, suggesting patella-femoral joint OA, and**
- **Low back pain, suggesting spinal degenerative changes.**

Ankylosing spondylitis typically occurs in young men, and associates with pronounced early morning stiffness and buttock pain.

Osteoporosis is not symptomatic, unless accompanied by a spinal fracture. Osteoporotic spinal fractures present with acute pain which improves over a period of few weeks to a couple of months.

There are no red-flag symptoms to raise the possibility of discitis or malignancy.

63. The most appropriate time interval for monitoring his full blood count (FBC) according to current UK guidance would therefore be in one month. In methrotrexate.

64. This man presents with acute gout, has chronic renal impairement, AF and takes warfarin.

Non-steroidal anti-inflammatory drugs (NSAIDs) would be the treatment of choice but may cause a deterioration in renal

function and would be associated with an increased risk of bleeding in the elderly.

The adverse effects of colchicine (especially gastrointestinal symptoms) would be more likely in the elderly and should probably be avoided in those with renal impairment of this degree.

Thus steroids are probably the best option.

65. This gentleman has haemochromatosis. The typical presenting features are diabetes, bronzing of the skin, hepatomegaly (due to iron deposition) and arthropathy (especially of the second and third metacarpophalangeal joints, with hook-like osteophytes on x-ray). Occasionally the arthropathy affects larger joints such as the hips, knees and shoulders and can resemble rheumatoid arthritis.

66. This patient has SAPHO syndrome. SAPHO is an acronym for synovitis, acne, pustulosis, hyperostosis, and osteitis. It is characterised by osteosclerotic bone lesions, sterile osteomyelitis, and a variety of skin lesions.

- **Synovitis - may be present rarely, and associates with erosions.**
- **Acne - may be severe (conglobate or fulminans) and recur with new bony involvement.**
- **Pustulosis - palmo-plantar pustulosis occurs in approximately 50% of patients, other skin lesions may include psoriasis, hidradenitis suppurativa, acne, and rarely Sweet's syndrome.**
- **Hyperostosis (increase in bone substance) and osteitis (inflammation of the bones) - the bony lesions typically**

involve the acromioclavicular, and sternoclavicular joints. Other sites include anterior chest wall, sternum, clavicle, pubic symphysis, spine, and mandible. These lesions are visualised on 99m technetium bone scan or MRI.

The cause of the SAPHO syndrome is unknown. The skin lesions are characterised by neutrophilic pseudoabscesses. Bone biopsy can reveal sterile osteomyelitis.

Diagnosis should be suspected when there is an association of rheumatic pain with a pustular skin disease.
SAPHO has no specific treatment, and some cases remit spontaneously. Typical treatment can be used for the arthritic symptoms (i.e. non-steroidal anti-inflammatories and disease modifying anti-rheumatic agents). Isotretinoin and aciretin can be used to treat the skin disease. In the more severe cases corticosteroids, calcitonin, bisphosphonates and TNF-inhibitors can be used.

- **67. Haemophilia**
- **Haemosiderosis from recurrent haemarthrosis**
- **Haemochromatosis and**
- **Pigmented villonodular synovitis (PVNS)**

are differential diagnoses of arthropathies associated with iron deposition in the joints. Iron deposition causes a brown stained synovial fluid.

They can therefore lead to brown-stained synovial fluid.

Calcium pyrophosphate crystal arthritis (pseudogout), typically occurs in elderly patients who have a history of osteoarthritis. It presents with acute onset of joint swelling and pain.

This patient also has no risk factors for gout (young age, no history of excessive alcohol intake), meniscal tears (no injury), or reactive arthritis (no preceding infections).

PVNS is a rare proliferative disorder that affects the synovium in young and middle aged adults. Current thinking is that it is an inflammatory process, although some believe it is a benign neoplasm.

Monoarticular involvement, the most common manifestation, occurs in two forms: localised and diffuse. The localised form is characterised by focal synovial involvement, with either nodular or pedunculated masses. The diffuse form, in contrast, affects virtually the entire synovium. Although any joint can be involved, the knee is the most common.

Symptoms are usually non-specific (pain, warmth, swelling). On examination there is tenderness, effusion and restricted joint mobility. Radiographs are often unremarkable, but MRI can show intra-articular masses with signal dropout on T2 weighted images. Joint aspiration yields xanthochromic or serosanguineous fluid.

The optimal treatment of PVNS is surgery. The local recurrence after marginal excision for localised disease is low. However, recurrence after open synovectomy for diffuse PVNS is relatively high (up to 46%, higher with arthroscopic resection). Synovectomy, in addition to disease control, can prevent secondary osteoarthritis. Complications include arthrofibrosis and wound breakdown.

Intra-articular radioactive isotopes or external beam radiotherapy may be benefical anjuvant therapy for extensive diffuse and recurrent PVNS.

In some patients total joint arthroscopy may be the only effective treatment.

PVNS can be aggressive, with marked extra-articular extension.

68. Cyclophosphamide causes haemorrhagic cystitis, and increases the risk of developing bladder cancer in the future. The risk increases with increasing doses of cyclophosphamide. So you do cystoscope.

69. In patients with longstanding diabetes and peripheral neuropathy, a red hot swollen foot should raise suspicion of Charcot neuroarthropathy.

Charcot neuropathy presents as a warm, swollen, erythematous foot and ankle, and infection is important to exclude. The majority of patients are in their 50-60s, and they often present in the latter stages of the disease.

It can occur in association with a variety of conditions, including leprosy, poliomyelitis, rheumatoid arthritis, although today the most common cause is diabetes mellitus.

The pathophysiology of Charcot neuroarthropathy is not completely understood, but is thought to start with peripheral neuropathy. The lack of pain sensation may mean that patients subject the foot joints (commonly the midfoot) to stress injuries

that lead to the Charcot process. It is important to note however that about half of patients present with pain.

Four stages of Charcot neuropathy are recognised:

- **Stage 0 (inflammation): characterised by erythema and oedema, but no structural changes**
- **Stage 1 (development): bone resorption, fragmentation and joint dislocation. Swelling, warmth and erythema persist but there are also radiographic changes such as debris formation at the articular margins, osseous fragmentation and joint disruption**
- **Stage 2 (coalescence): bony consolidation, osteosclerosis and fusion are all seen on plain radiographs**
- **Stage 3 (reconstruction): osteogenesis, decreased osteosclerosis, progressive fusion. Healing and new bone formation occur, and the deformity becomes permanent.**

Radiographs are an important part of investigating a patient with possible Charcot arthropathy. All radiographs should be taken in the weight-bearing position.

MRI can demonstrate changes in the earlier stages of the condition, and is therefore important in allowing treatment to be instigated earlier.

In stages 0 and 1 the treatment is immediate immobilisation and avoidance of weight-bearing. A total-contact cast is worn until the redness, swelling and heat subside (generally 8-12 weeks, changed every 1-2 weeks to minimise skin damage). After this the patient should use a removable brace for a total of four to six months.

Bisphosphonates can be used, but evidence of clinical benefit is lacking. Surgery is reserved for severe deformities that are susceptible to ulceration, and where braces and orthotic devices are difficult to use.

A normal FBC and CRP in this case make cellulitis unlikely. There is no swelling of the calf to suggest a deep vein thrombosis.

Fragility fractures are those which are caused by a force equivalent to a fall from the height of a chair or less. They are typically seen on a background of osteoporosis and there is usually a history of trauma.

Gout classically causes an acute monoarthritis and the presentation is typically more acute than described here.

70. the best option to confirm a diagnosis of ankylosing spondylitis=x Ray of the sacroiliac joints

71. De Quervain's tenosynovitis is thought to be related to overuse, and is common in golfers and racquet sport players.

Most affected are females 30-50 years old.

Finkelstein's test (flexion of the thumb into the palm, making a fist over the thumb and ulnar deviation of the wrist causes pain in the first dorsal extensor compartment) is diagnostic.

72. Current United Kingdom guidance suggests that during the first three months of treatment with sulfasalazine, full blood

count (FBC) should be monitored monthly for the first three months.

If

- **The white cell count is less than 3.5**
- **Neutrophils less than 2 or**
- **Platelets less than 150**

sulphasalazine should be withheld until discussion with the specialist team.

73. The incidence of rheumatoid arthritis is approximately 2.5 per 10,000 per year (1.5 in men and 3.6 in women).

74. Both co-trimoxazole and sulphasalazine contain sulphonamide groups and hence an allergy to co-trimoxazole would be a contraindication to the use of sulphasalazine.

75. The combination of:

- **Shortness of breath**
- **Atrial fibrillation**
- **Lower limb oedema**
- **Ascites**
- **Raised JVP**
- **Bi-atrial enlargement with normal systolic ventricular function**

is typical of constrictive pericarditis.

Further ECHO examination would reveal peak systolic and diastolic values decreasing with inspiration, and impaired diastolic function.

Constrictive pericarditis is the commonest cardiac complication of rheumatoid arthritis. It is found in 30-50% of patients at postmortem and up to 30% by echocardiography. It is commoner in males and seropositive patients with active joint disease. Histopathology shows chronic inflammation and fibrosis.

76. is most likely to cause drug-induced lupus erythematosus

(DILE) syndrome=Procainamide Correct

77. Learning points:

- **Bone mineral density measurement in postmenopausal women**
- **Indications for bisphosphonate prophylaxis with glucocorticoid therapy**
- **Specific bisphosphonate pharmacotherapy.**

The salient features of this case are;

- **The underlying history of multiple myeloma[i]**
- **Long term use of zolendronic acid[ii]**
- **Dental extraction surgery[iii]**
- **A non-healing lesion which has persisted for greater than eight weeks[iv] despite investigation and radiological evidence of pathological fractures.**

Zolendronic acid has been linked to the development of osteonecrosis of the jaw, with a statistically significant

association to dental extraction surgery as a precipitant. There is an increased incidence of this complication amongst patients with underlying malignancy, especially multiple myeloma.

A putative role for homozygosity of the T allele polymorphism for cytochrome P450 CYP2C8 conferring a significantly increased likelihood of developing ONJ is still under investigation.

78. Learning points:

- **Clinical appearance of early morphea**
- **Pathophysiology of morphea**
- **Immunological profile of morphea.**

This gentleman has developed localised scleroderma, an idiopathic inflammatory skin condition which causes excessive collagen deposition and fibrosis. This patient exhibits the commonest form, 'circumscribed/plaque'[i] morphea.

This is a well defined oval to round plaque that to fails to meet the criteria for generalised morphea. The pathogenesis is poorly defined. An autoimmune component is suggested by enhanced T helper 2 (Th2) dependent interleukin 4 (IL-4) activity, which in turn upregulates transforming growth factor beta (TGF -beta). TGF-beta stimulates fibroblast production of collagen and other extracellular matrix proteins.

Possible serum abnormalities include hypergammaglobulinaemia, peripheral eosinophilia and an elevated erythrocyte sedimentation rate (ESR) and C reactive protein (CRP). Anti-Cu/Zn superoxide dismutase antibodies have been found in up to 90%[ii] of some patient samples

79. Learning points:

- **Basic mechanism of action and pharmacokinetics of allopurinol**
- **Basic mechanism of action of azathioprine**
- **Potential consequence of their interaction**
- **Second line urate lowering therapy.**

This patient has developed bowel sepsis (foul smelling diarrhoea, hypothermic, tachycardic, hypotensive) secondary to pancytopenia induced by the co-administration of allopurinol and azathioprine.

The prodrug azathioprine is metabolised to its active compound 6-mercaptopurine (6-MP). 6-MP undergoes catabolic oxidation to 6-thiouric acid[i] by xanthine oxidase.

Allopurinol has a peak onset of action of one to two weeks[i] and works by inhibiting xanthine oxidase.

Co-administration of these drugs may lead to accumulation of 6-MP and increases the risk of myelosuppression.

A second line urate-lowering agent such as febuxostat[i] would be more appropriate.

A Crohn's flare would not typically cause pancytopenia.

Normal amylase refutes pancreatitis.

80. Leflunomide is associated with serious hepatotoxicity.

Increased aminotransferases are commonly seen in association with therapy occurring in 15-20% of cases (less than a twofold rise).

However, more serious elevation (greater than threefold) is seen in less than 5%.

Generally, most hepatic events occur within the first six months of use. It is recommended liver function tests (LFTs) be checked monthly for six months and, if stable, two monthly thereafter.

If aspartate aminotransferase (AST) or alanine aminotransferase (ALT) is between two and three times the upper limit of normal, and the leflunomide dose is more than 10 mg daily, the dose should be reduced to 10 mg and LFTs rechecked weekly until normalised. If the ALT and AST are returning to normal, the patient should be left on 10 mg per day. It the LFTs remain elevated, leflunomide should be stopped and discussed with the specialist team.

81. Tennis elbow is due to lateral epicondylitis and is due to overuse/strain of the extensor muscles of the forearm. It is most common in the fourth decade.

On examination there is pain in the region of the lateral epicondyle during resisted extension of the fingers and wrist.

82. Methotrexate is teratogenic and, according to the British National Formulary (BNF), the manufacturers advise effective contraception during and for at least three months after stopping methotrexate (both males and females).

83. pro-inflammatory cytokine?= Tumour necrosis factor – alpha

84. Which of the following has the greatest specificity for Wegener's granulomatosis?= cANCA and positive antibodies to proteinase

85. As soon as the diagnosis is suspected, high dose corticosteroids should be given. Current BSR guidelines recommend:

• Uncomplicated GCA (no jaw or tongue claudication, or visual symptoms): prednisolone 40-60mg daily

• Complicated GCA:

- Evolving visual loss or history of amaurosis fugax: IV methylprednisolone 500mg-1g daily for three days, followed by oral corticosteroids

- Established visual loss: at least 60mg prednisolone daily

I wish my little effort help someone in some place in some time !!!!!

Yours/faisal hemeda

Ain shams university-EGYPT

CARDIO AND ENDOCREINE ONLY IN PASTEST NOTES

PHARMA MUST BE DONE FROM PASTEST EVEN IF U R DOING ONEXAM

BASIC SCINCE

Better to see it in my pastest notes and to do it from pastest

Anatomy

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1.regarding hindbrain The vermis lies medial to the cerebellar hemispheres

2. The radial nerve innervates the triceps muscle; it is primarily derived from the C7 nerve root.

3. The symptoms of proximal bone pain with hypocalcaemia and low phosphate suggest a diagnosis of osteomalacia in this elderly woman. Vitamin D concentrations should therefore be measured.

Basic science

1. **a novel oral TNF-alpha antagonist in late stage clinical trials.**

   Which of the following would be an expected property of this agent =Decreased protein catabolism

2. **Which of the following arteries are branches of the axillary artery =Subscapular artery**

3. **The diagnosis is Alport's syndrome, which is a disorder of type 4 collagen assembly and is inherited as an X linked disorder in 85% of cases**

BIOCHEMISTRY

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1.This patient has features of heart failure which appear to be related to underlying ischaemic heart disease so do for him Brain natriuretic peptide (BNP) .

2. Which of the following statements is true concerning gamma glutamyl transferase (GGT)?

- **Increased GGT is found in fatty liver**

3 .Metabolic alkalosis is characteristically found in which of the following?=pyloric stenosis

4. Thallium scan is not useful in sarcoidosis

5. With which of the following is lipoprotein lipase deficiency associated?=marked hypertriglyceridemia

6. Which of the following medications can cause hypomagnesaemia?=cisplatin

7. Which of the following are antibodies to which enzymes involved in glucose metabolism may be found in primary biliary cirrhosis?= Pyruvate dehydrogenase (generates acetyl-coA from pyruvate)

8. Anti-mitochondrial antibodies (AMAs) - the serological hallmark of primary biliary cirrhosis (PBC) - are often targeted against pyruvate dehydrogenase.

9. Which of the following statements regarding myosin is correct? =Myosin heavy chain mutations are associated with development of familial hypertrophic cardiomyopathy

EMMERGENCY

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1.if a patient with TB the startgy for his ttt is 4 drugs for 2 months. What ever the source of the infection .

2. Frontalis is a quadrilateral muscle found on the forehead that elevates the eyebrows; hence paralysis of this muscle can lead to eyebrow ptosis which my caused by botox injection.

3.

Work Smart Session - MRCP Part 1

Question: 5 of 10

Time taken: 05:30

A 19-year old girl has been brought to the Emergency department by her friends following a night out at a party. Her friends comment that she has been talking by herself about 'irrelevant things'. She seems agitated and restless.

On examination, her reflexes are increased and an electrocardiogram (ECG) demonstrates ventricular ectopics.

What kind of substance abuse do you suspect at this point?

(Please select 1 option)

- **Alcohol**
- **Barbituate**

- Cannabis
- Ecstasy Correct
- Glue sniffing

This is a case of ecstasy overdose.

Ecstasy (3,4-methylenedioxymethamphetamine, MDMA) stimulates the central nervous system.

It causes:

- **Increased alertness and self-confidence**
- **Euphoria**
- **Extrovert behaviour**
- **Increased talkativeness with rapid speech**
- **Lack of desire to eat or sleep**
- **Tremor**
- **Dilated pupils**
- **Tachycardia and**
- **Hypertension.**

More severe intoxication is associated with:

- **Excitability**
- **Agitation**
- **Paranoid delusions**
- **Hallucinations with violent behaviour**
- **Hypertonia and**
- **Hyperreflexia.**

Convulsions, rhabdomyolysis, hyperthermia, and cardiac arrhythmias may also develop.

In severe cases of MDMA poisoning:

- **Hyperthermia**
- **Disseminated intravascular coagulation**
- **Rhabdomyolysis**
- **Acute renal failure and**
- **Hyponatraemia**

4. This patient has clinical features of hypoadrenal crisis with abdominal pain, vomiting and shock with hypoglycaemia, hyponatraemia and hyperkalaemia. In the UK this is commonly due to autoimmune destruction of the adrenal glands (Addison's disease).

5. This patient was markedly comatose on arrival but quickly regains consciousness. This suggests a short acting (probably) inhaled anaesthetic-like agent - glue.

6. Haemodialysis is the mainstay of treatment for acute lithium toxicity.

7. Paracetamol is conjugated to glucuronic acid and sulphate under normal conditions.

8. This patient fits the criteria for life-threatening asthma. A normal $PaCO_2$ in an asthmatic is a warning of impending respiratory failure as the patient becomes too tired to ventilate adequately.

9. This patient has a metabolic acidosis with a low HCO_3 and a normal $PaCO_2$.

In a patient with low pH, increased hydrogen ion concentration will be found.

10. This patient has a pulmonary embolism (PE) following a recent haemorrhagic stroke.

The risk of rebleeding into the stroke area is too high with anticoagulation.

The best action would be percutaneous insertion of IVC filter which may be as effective as anticoagulation. It is used in cases where anticoagulation is a contraindicated or in those in whom anticoagulation alone fails.

11. in malignant hyperpyrexia =Muscle biopsy may be histologically normal

12. The x ray demonstrates a small avulsion fracture from the base of the distal phalanx where the extensor tendon attaches. Given the clinical findings and x ray the diagnosis is mallet finger, therefore option D is a correct answer.

13. The use of prophylactic antibiotics in dog bites is controversial although evidence supports their use in deep wounds, bites to the hands and signs of infection so give the patient co-amoxiclav.

14. Immediate treatment of anaphylaxis includes cessation of whatever caused it.

Then give oxygen, fluids and adrenaline/epinephrine 0.5 mg intramuscularly or subcutaneously.

15. This man is intoxicated.

He has a normal acid base balance, slight hyponatraemia reflecting dilution, and very high osmolality reflecting the presence of ethanol.

16. Sarin is an organophosphorus. Pralidoxime reactivates acetyl cholinesterase enzyme. It should be used in the first few hours.

17. Hypersalivation is seen with:

- **Parasympathomimetic agents**
- **Insecticides**
- **Arsenic**
- **Strychnine**
- **Chlormethiazole**
- **Clozapine**

18. Dizziness and fainting are not associated with transient ischaemic attacks (TIAs) or strokes and as such are not an indication for urgent carotid intervention.

19. There is an indication for intervention in this patient. Carotid artery atherosclerosis is an important cause of iscahemic stroke. The left-sided neurological signs in this patient indicate the symptomatic carotid is on the right side.

Carotid endarterectomy has been established as an effective treatment for both symptomatic patients and asymptomatic patients who are shown to have carotid artery stenosis. It reduces the risk of disabling stroke or death by 48% in a person with severe symptomatic carotid stenosis (>70%) who has had a TIA.

20. Initial treatment of cocaine poisoning involves intravenous administration of diazepam to control agitation, and cooling measures for hyperthermia.

21. A 17-year-old male presents to the Emergency department after an overdose of alcohol and paracetamol.

He complained of abdominal discomfort and an intravenous infusion of N-acetylcysteine was commenced. 15 minutes later

he developed breathlessness, reported feeling flushed and developed a tachycardia.

Which of the following is most likely to have occurred?

The patient has received N-acetylcysteine previously

22. Which of the following is correct concerning a precordial thump? =Is more successful with pulseless VT than VF

23. Which of the following is currently recommended as the drug of choice in treating refractory ventricular fibrillation or pulseless ventricular tachycardia?= 300 mg of amiodarone made up to 20 ml with 5% dextrose given as an intravenous bolus is the drug of choice

24. An 80-year-old gentleman attends the Emergency department with a stroke affecting his left arm and leg.

He has had radiotherapy to the neck and there is a lot of scarring present. Carotid scanning shows 70% stenosis in the symptomatic side.

Which statement is correct?

=Carotid stenting should be performed

(There is an indication for intervention in this patient.

As the patient has a hostile neck it would be difficult to perform a carotid endarterectomy but not contraindicated.

It would be preferable to perform carotid stenting if possible.

25. A 90-year-old lady attends the Emergency department with a dense stroke affecting her left arm and leg.

She is hemiplegic and confused. A CT scan confirms that there is a right CVA. Carotid scanning shows stenosis of 75% on the right and 90% on the left.

What is the best course of action?

(Please select 1 option)

- **Admit but no surgical intervention** **This is the correct answer**

This patient has a symptomatic carotid stenosis on the right that would be appropriate for surgery if this were a TIA or resolving stroke.

Unfortunately, with dense strokes, if there is no recovery, the benefits are greatly reduced due to end-organ damage.

26. A 64-year-old woman presented 10 hours after ingestion of 12 g of quinine sulphate.

Which of the following is the most common characteristic clinical feature in this situation?= blindness .

27. Flexor sheath infection or infectious flexor tenosynovitis results from a microorganism (commonly *Staphylococcus aureus*) multiplying in the closed space of the flexor tendon sheath and culture-rich synovial fluid medium. This is usually secondary to penetrating trauma to the hand.

28. A gentleman attends the Emergency department with a stroke.

On the ward his stroke is starting to resolve and the likely diagnosis is a transient ischaemic attack (TIA).

Which is the next best course of action?

=Urgent CT head and carotid duplex whilst inpatient

29. This patient fits the criteria for acute severe asthma. In such cases β2-agonists should be administered as soon as possible, preferably nebulised driven by oxygen. Repeat doses should be given at 15-30 minute intervals, .

30. The patient has ingested a seriously toxic dose of paracetamol.

The best determinant of this risk at 72 hours would be a prolonged prothrombin time.

ETHICS

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0.Which one of the following additional findings would suggest a diagnosis of delirium rather than dementia = The patient was coherent and compliant on admission

1. **One of the main characteristics of essential tremor is that the tremor is an action tremor. Action tremor constitutes both postural and kinetic tremor.**

2. **Which of the listed common conditions can mimic the signs and symptoms of an acute stroke?= hypoglycemia**

3. **Which one of the following deaths should be reported to the coroner = A 69-year-old male with pneumoconiosis is admitted with fever and breathlessness. He dies two days later from pneumonia**

5. doctors need to be aware of the circumstances in which a death should be reported.

These include:

- **The cause of death is unknown.**
- **The deceased was not seen by the certifying doctor either after death or within 14 days before death.**
- **The death was violent or unnatural.**
- **The death may be due to an accident.**
- **The death may be due to self neglect or neglect by others.**

- **The death may be the result of industrial illness or due to the persons employment (as with the 69-year-old male above, pneumoconiosis being an industrial disease).**
- **The death may be due to an abortion.**
- **The death occurred during an operation or before recovery from anaesthesia.**
- **The death may be suicide.**
- **The death occurred during or shortly after being taken into police custody.**

6. Work Smart Session - MRCP Part 1

Question: 7 of 10

Time taken: 31:46

A 22-year-old female is admitted following severe injuries sustained in a road traffic accident. She is communicative but in shock with low blood pressure and tachycardia.

You realise that without a transfusion she will die but she informs you that she has recently become a Jehovah's Witness and that she adamantly refuses transfusion, despite knowledge that she could die.

Her distraught parents tell you that she has only recently joined the Jehovah's Witnesses and implore you to transfuse her, as they insist that she does not know her own mind.

Together with other intervention which she permits, what is the most appropriate action regarding possible transfusion?

(Please select 1 option)

- **Declare her incompetent and transfuse**
- **Do not transfuse even if it means that she will die**
- **Get immediate psychiatric intervention to section her and then transfuse**
- **Transfuse immediately, irrespective of the patient's wishes**
- **Wait until she becomes unconscious and then get consent from her parents to transfuse**

Do not transfuse even if it means that she will die Correct

The patient appears competent and has elected to refuse the transfusion. Despite the parents' protestation you must respect the patient's wishes if, as seems likely here, she is making a reasoned judgement.

If the patient refuses the transfusion then even if she slips into unconsciousness you are not permitted to treat with transfusion even if it is in her best interests.

7. Which of the following defines ethics = Ethics are defined as the study of morality/the philosophical study of moral values and rules.

8. In which of the following cases is the individual's right to autonomy violated? = An older man whose physician and family coerce him into having foot surgery

9. Autonomy refers to an individual's right to be self-governing.

Although the procedures may be in the best interests of the patient, if the patient refuses and this refusal is informed, then the doctor or relatives cannot coerce that person into having the procedure.

10. Which of the following is true with respect to completion of cremation forms? = A cremation may only take place if a coroner rules that no inquest or post mortem is needed

11. You are the general practitioner of a 76-year-old man who has been suffering from bronchial carcinoma for the past one and a half years. He is requiring increasing amounts of morphine to cope with his pain, and he dies in his sleep.

You certify the cause of death as bronchial carcinoma.

His wife who requests cremation asks to see form 4.

Which of the following is true with respect to her viewing the form?

You can apply for certain information not to be disclosed by discussing this with the referee

12. A 30-year-old male is unconscious on admission following a road traffic accident. He was the driver of the car and there is the suspicion that he was responsible for the accident in which a passenger of another car died. In attendance with the patient is his wife who was uninjured in the accident. The police are keen to obtain a blood sample for alcohol measurement but the patient is incapable of giving consent for this procedure.

What is the most appropriate action in these circumstances?

Draw a blood sample for later analysis when the patient is competent to consent.

13. There is clear guidance published on such a situation by the BMA. Following the Police Reform Act, it is no longer necessary to obtain consent from unconscious or incpacitated drivers. However, the sample is not tested until the person regains competence and gives valid consent to it being tested. A competent person who refuses to allow his or her sample to be tested might be liable to prosecution. Similarly, the new law recognises the duty to justice.

14. ou are intending to publish a case report as a fascinoma of the month within a national medical journal. As part of the publication you provide an image from the MRI film of the abdomen.

Medical Illustration have transferred the film to electronic format and have removed all patient identification markings. The case report itself is otherwise completely anonymous.

Which of the following concerning consent is correct?

=Patient consent must be provided for publication

15. Does integrity refer to a virtue that requires the physician to do the following =Practise medicine according to intellectual and moral standards of excellence

16. Integrity refers to the practise of medicine according to appropriate ethical standards and excellence.

17. By which of the following are most deaths determined?= The absence of vital signs

18. A placebo is defined as which of the following? = An inert substance given as a medicine in an assessment of its suggestive effect

19. A placebo typically produces mainly a psychological effect when administered to a patient or person involved in a trial.

20. Which medical procedure highlighted the need for new methods of defining and determining death in the face of continued cardiorespiratory function = Organ transplantation

21. There are a number of notifiable infectious diseases that it is mandatory to report to the Consultant in Communicable Diseases Control. They include:

- **Tuberculosis**
- **Malaria**
- **Meningitis**
- **Meningococcal sepsis.**

22. Cremation of fetal remains under 24 weeks is not subject to the Cremation Act.

23. Old age is usually not an acceptable cause of death for cremation purposes when completing form 4

A key point with respect to completing form 4 is that the cause of death must be accurately established.

Whilst old age may be acceptable when certifying for a burial, it is not accepted by cremation referees.

GENETICS

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1. https://www.facebook.com/groups/mrcpuk/

1.This boy has tuberous sclerosis ====chr 9 and 16

2. The intention to treat (ITT) analysis contains all the patients randomised to a particular therapy regardless of whether they received it or not. ITT is considered to be the analysis which is least subject to bias.

3. Mutation in which of the following is associated with Ehlers-Danlos syndrome?

(Please select 1 option)

- **Collagen type 1 gene**

4.Which of the following is characteristic of cystinuria === Radio-opaque renal calculi .

5. Which of the following is true of the NF1 gene === On chromosome 17 .

6. autosomal recessive === Congenital adrenal hyperplasia .

7. Which of the following is a polygenic disorder?

(Please select 1 option)

- **Ankylosing spondylitis**

8. Which one of the following conditions is a polygenic disorder?

(Please select 1 option)

- **Amyotrophic lateral sclerosis (ALS)**

9. Chylomicrons are formed in the gut from exogenous triacylglycerols and cholesterol.

They are released into the lymph and thereby enter the blood.

They are not formed in the liver.

10. Diabetes - especially type 2 diabetes - is associated with macrovascular disease like Mesenteric artery occlusion

11. In meiosis which of the following is true ===== Non-disjunction at mitosis (meisois 2) results in mosaicism.

12. A 29-year-old male presents to you seeking advice regarding starting a family.

He has common variable immunodeficiency and wants to know what is the risk of passing this on to his children?

(Please select 1 option)

- **Less than 5%**

13. In X linked recessive inheritance, which of the following is true === Daughters of affected males will all be carriers

14.

Marfan syndrome
===AD.

MOLECULAR BIOLOGY

بسم الله الرحمن الرحيم

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1.Which of the following is this specific area of tRNA === Anticodon .

1. mRNA has codons which are bound by the anticodons on tRNA during translation of protein synthesis.

2. Which of the following is true of restriction enzymes==Cut DNA .

3. **Which of the following is true regarding proteins known as cyclins ===Are differentially expressed throughout the cell cycle**

4. **The level of cellular telomerase activity will affect which of the following ==== The number of cell divisions a cell is capable of undergoing**

5. **Is it true that phosphorylation of protein tyrosine residues is associated with the following === Cell signalling pathways .**

6. **Northern blotting is a technique that can be used to detect which of the following =====RNA .**

8. Which of the following stimulate the generation of cyclic AMP as the second messenger?

(Please select 1 option)

- **Cholera toxin**

9. Apoptosis is the process of programmed cell death and occurs in cells that have damaged DNA.

A mediator of this process is a tumour suppressor gene that inhibits mitosis and promotes apoptosis.

This gene is which of the following ===p53

10. A plasmid is best described as which of the following === Bacterial DNA separate from the chromosome

11. The polymerase chain reaction (PCR) is used to amplify small amounts of deoxyribonucleic acid (DNA) for further analysis. First the DNA double helix must be split into two strands.

By which of the following is this achieved ==== Heating to nearly 100°C

12. Which molecule is produced in the nucleus, matures in the cytoplasm, binds to the ribosome and initiates protein synthesis?

(Please select 1 option)

- **Messenger RNA**

13. Which of the following are found in eukaryotic and prokaryotic cells ==== Ribosomes

14. In which one of the following conditions is deoxyribonucleic acid (DNA) analysis the most useful diagnostic test====Huntington's chorea

15. Which one of the following has its own self-replicating DNA?===== Mitochondria.

I am grateful for dr.osama mahmoud who teach us internal medicine and learn us how to be Human before Being Doctors

أ.د.....اسامه محمود فخر طب عين شمس وقسم النفرولوجي

معلم اجيال واجيال من الاطباء اللهم اجزه عنا خير الجزاء

all my family(my father –my mother – my sisters) who support me and believe in me I say I love you …..

DONE BY FAISAL HEMEDA

MBCHB/MRCP2014