2022 - IID - MD4043 - Eksamen 3
Eksamensdato: 2022-12-16

1
[A boy is born at term after a normal pregnancy. His birth weight is 3.5 kg and he has Apgar scores of 5, 6 and 6 after 1, 5 and 10 minutes respectively. He is still pale and has reduced tone and irregular respiration after 15 minutes. The pediatrician is called and a pulse oximeter is placed on the child's right hand.]
[Why is the pulse oximeter placed on the right hand?]

A [Just after birth the pulmonary vascular resistance could still be high and the saturation in the right hand reflects the saturation in the blood going to the heart and brain]
B [At this time the pulmonary vascular resistance has dropped and the oxygen saturation in the right hand reflects the true oxygen saturation in the blood which supplies the body]
C [Just after birth the pulmonary vascular resistance could still be high and the oxygen saturation in the right hand reflects the true saturation in the blood which supplies the body]
D [At this time the pulmonary vascular resistance has dropped and the saturation in the right hand reflects the oxygen saturation in the blood which flows from the aorta to the arteria pulmonalis]

0000163d13936ec0b2

2
[A 6-year old girl comes to you, her GP, because her mother thinks that she has lost a bit of weight, even though she has recently been eating and drinking more than usual. She has also been quite thirsty at night. She has previously suffered a lot from constipation, accompanied by several urinary infections. She still takes Movicol when required. She did not stop wearing a nappy until she was 4, but she has now started wetting the bed at night again. She had a cold accompanied by a temperature a couple of weeks ago, but now she just has a little runny nose and is a little weak.
What type of examination would it be most suitable to undertake at the doctor's office now?]

A [Blood glucose]
B [Urine culture]
C [CRP]
D [Hematology (Hb, WBC, thrombocytes]

0000163d13936ec0b2

3
[A 6-year old boy has been referred by the doctor at the primary health care centre because his growth in height has been poor. He has dropped from the 50th percentile to the 2.5 percentile between the ages of 4 and 6 years. His weight in relation to his height is in the 2.5 percentile range. He had atopic eczema when he was an infant. He feels fit and healthy, but his mother says that he often suffers from loose stools which cannot be easily flushed down the toilet. His blood samples show: Hb 9.7 g/dl (reference: 11.5-14.5 g/dl), ferritin 2 µmol/L (reference: 15-100 µmol/L, calprotectin in the stool 15 mg/kg (reference: <50 mg/kg), CRP <5 mg/l (reference: <5 mg/l).
What is the most likely diagnosis?]

A [Milk allergy]
B [Crohn's disease]
C [Celiac disease]
D [Giardia Lamblia infection]

0000163d13936ec0b2

4
[A woman from Somalia arrives at the maternity ward with contractions. She has been living in Norway for 3 years. Her pregnancy health card shows that she already has 2 children and is anti-HBs positive, anti-HBc negative, HBsAg and HBeAg negative.]
Which preventative guidelines apply to her newborn child?]

A [Expedite vaccination due to the risk of infection: at birth, after 4 weeks and 3 months]
B [Hepatitis B vaccinations are not included in the Norwegian child vaccination programme]
C [Hyperimmune globulin and vaccination x 5: at birth, after 1, 3, 5 and 12 months]
D [Follow the usual vaccination programme with vaccinations after 3, 5 and 12 months]

0000163d13936ec0b2

5
A pregnant woman arrives at the maternity ward with spontaneous contractions at term. She suffered from several urinary infections during her pregnancy and during the days prior to the commencement of birth she had mild dysuria. While giving birth she had a high temperature. The child had an Apgar score of 5-7.8 and required stimulation before recovering. After several hours of observation in the maternity ward the child was transferred to the NICU due to lethargy, poor colour and a CRP of 15. The pediatrician suspects an infection (sepsis), takes a blood culture and starts broad spectrum antibiotics.
[What is the most likely microbe?]

A [Group B streptococci]
B [Staphylococcus epidermidis]
C [Haemophilus influenzae]
D [Escherichia coli]

0000163d13936ec0b2

6
[A 3-year girl has been suffering from recurrent cystitis during the past year, most recently one month ago. She has not previously been examined for this. During the last 2 days she has once again been complaining about a burning sensation during urination and urinating more often that usual. She does not have a fever. A urine dipstick test of a recently let urine sample after her mother had washed her groin thoroughly shows positive nitrites and leucocytes.
What is the most correct action?]

A [Send the urine for culture, start treatment with oral amoxicillin - clavulanic acid for 7-10 days, refer for an ultrasound scan of the kidneys and micturition cystourethrography]
B [Arrange for a urine culture, send positive samples to the microbiologist, start oral nitronfurantoin treatment for 5-7 days, no further examination]
C [Start immediate treatment with oral trimethroprim for 5-7 days and refer for examination in the children's ward after she is better]
D [Nitrofurantoin treatment for 5-7 days, check for incontinence, toilet havits and obstipation and refer for an ultrasound scan of the kidneys]

0000163d13936ec0b2

7
[A 14-year old girl with known migraine has been experiencing changes and a worsening of her headaches during the last two months. She has previously suffered from migraine attacks involving headaches and nausea once a month. During these attacks she responded well to analgesics and rest. She is now suffering from global heacahces several times a week, varying in intensity and the time of day. Her headaches are slightly better when she takes paracetamol,which she has been taking daily for the last four weeks. During the past week she has also been nauseous and has been vomiting several times each day.
Which diagnostic assessments and actions do you judge as most correct?]

A [Medication induced headache, discontinue paracetamol]
B [Worsening of migraine, trial of triptan nasal spray]
C [Different cause of headache, refer for a brain MRI]
D [Intractable migraine, refer to pediatric neurologist]

0000163d13936ec0b2

8
[Which is the correct inhalation technique when administering asthma medication through an aerosol spacer chamber and mask for a child aged 2-3 years?]

A [Shake the aerosol and then spray the required number of doses into the chamber. Breathe out deeply, and then in and hold the breath for 3-5 seconds.]
B [Shake the spray and then deliver one dose into the chamber. Breathe in and out normally into the chamber approx. 5 times. Repeat if several doses are to be administered.]
C [Shake the aerosol and then deliver the required number of doses into the chamber. Breathe in and out normally into the chamber approx. 5 times.
D [Shake the aerosol and then spray one dose into the chamber. Breathe out deeply, then in with the mouth around the mouthpiece and hold the breath for 3-5 seconds. Repeat if several doses are to be administered.]

0000163d13936ec0b2

9
[A 2-year old boy has had atopic eczema since he was 3 months old. The allergy test which was carried out at that time for specific IgE for milk and eggs was negative. Which of the following recommendations are considered to be most effective in such a situation in respect of eczema?]

A [Avoid irritating soaps and wool clothing]
B [Avoid eggs and food with added eggs]
C [Avoid dust mites by washing bed linen frequently]
D [Avoid cow's milk and food with added cow's milk]

0000163d13936ec0b2

10
[The maternity ward contacts you about a 5-hour old child born at term which weighs 4.7 kg. The pregnancy and birth were normal. The routine O2 saturation measurements are normal. The midwife thinks that the child is lethargic and a bit cold: 36.3 degrees.
Which test would you like an answer to first?]

A [Blood gas]
B [Bilirubin]
C [Blood glucose]
D [CRP]

0000163d13936ec0b2

11
A 5-week old boy is admitted due to poor weight gain and vomiting. Blood gas analysis produces the following values:
pH 7.51 (7.35-7.45), PCO2 6.9 (4.5-6.0), BE +12 (-3-+3)
Which diagnostic test would you prioritise in order to better understand the cause of this?

A [Ultrasound scan of the head in order to investigate increased intracranial pressure]
B [Chloride (Cl-) analysis]
C [Ultrasound scan of the abdomen]
D [X-ray of the O+S+D (oesophagus+stomach+duodenum]

0000163d13936ec0b2

12
[A boy who was born and grew up in Norway with Norwegian-born parents is now 14 years old. He is in 8th grade and has had all the recommended vaccinations in the child vaccination programme at the correct times.]
[Which of the following infections is he probably poorly protected against?]

A [Diptheria]
B [Whooping cough]
C [Measles]
D [Human papillomavirus]

0000163d13936ec0b2

13
[You are a GP and are contacted by the mother of one of your patients. She says that her 13-year old daughter has told her that she was subjected to involuntary intercourse the previous evening, committed by a 16-year old boy who she knew a bit previously.
What is the most important medical measure that you would implement now?]

A [You contact the nearest children's ward in order to collect forensic trace evidence and give emergency contraception.]
B [You take the patient to the office in order to give her emergency contraception and infection prophylaxis]
C [You take the patient to the office in order to give her emergency contraception and have samples taken for microbiological analysis.]
D [You write a prescription for emergency contraception and take the patient for an examination the following day.]

0000163d13936ec0b2

14
[A mother takes her 1.5-year old boy to you as their GP. She has just collected the boy from his father's and she notices something that she thinks looks like a bruise on the cartilage of his left ear. She is worried and adds that the boy's father was often violent. That was why they separated. You examine the boy and find bluish-red skin changes on an area covering approx. 1 x 1 cm on the upper part of the cartilege of his left ear. Otherwise no obvious bruises, wounds or scars.
What should you do now?]

A [You ask the mother to call the father to find out what happened.]
B [You decide to examine the child by undertaking a coagulation screen.]
C [Admit the child to the Children's Ward and submit a report about your concerns to the Child Welfare Services.]
D [You arrange for the boy to have a check-up and you also ask for the father to attend]

0000163d13936ec0b2

15
[You are a GP and are on call. The mother of a boy who is almost 4 years phones you. She says that he has developed a lopsided mouth today and his speech is a bit unclear. He's dribbling a bit, but is otherwise in good shape. He is also having problems with closing one of his eyes properly. The mother is very stressed because his grandmother has recently had a stroke and she thinks that this is very similar. You examine him and send him to hospital for further tests.
What diagnosis would one primarily exclude there?]

A [Borrelia encephalitis]
B [Thrombosis in the middle cerebal artery]
C [Severe otitis]
D [Bell's palsy]

0000163d13936ec0b2

16
[The parents of little Karoline, who is 2 years old, have just learnt that their girl's slow motor development is caused by cerebral palsy (CP). You are their GP and have been following the mother during her pregnancy. The parents need an explanation about how their girl sustained this brain damage. They experienced her birth as being exhausting, but not dramatic. Both the mother and girl were a bit exhausted afterwards, but the girl recovered well after a while. You go through the pregnancy, the hospital birth records and a list of known risk factors for CP without being able to identify a sure cause.
What conclusion should you end up with?]

A [Genetic testing has now become so precise that this will reveal the cause if no other tests produce results.]
B [It is most likely a birth injury which has not been recognised.]
C [The parents must wait for the results of the MRI scan because this will provide the answer.]
D [It is often not possible to find any individual causes. CP can be the sum of several unfortunate circumstances.]

0000163d13936ec0b2

17
[A 12-year old girl is receiving chemotherapy for osteogenic sarcoma every third week. She started the most recent 3-day treatment 10 days ago. You are a registrar with the local children's ward. The mother phones you and says that the patient has an axillary temperature of 38.2 degrees C, i.e. assuming a normal body temperature of 38.7 degrees. She is in good shape without any other symptoms. The mother wonders what she should do.
What should you say to the patient's mother?]

A [The patient's immune system is impaired and she has a temperature. She must start taking antibiotics. I will write a prescription for antibiotics that she needs to start taking today.]
B [The patient must take her temperature once again during in the next 1-2 hours. If her temperature is the same or higher, the patient will need to go to hospital for blood tests.]
C [The patient can take paracet and take her temperature again tomorrow. If her temperature is above 39.0 tomorrow they should contact you again.]
D [The patient needs to go to hospital today for blood tests and possibly be admitted.

0000163d13936ec0b2

18
[A 15-month old boy visits you, his GP, with his mother. He has atopic eczema. His mother says that he has been coughing a lot during the last 3 months. They have a dog and a cat at home. He has been admitted to the local hospital twice during the last 6 months with acute bronchiolitis and was discharged without any medication. In connection with his last admittance specific IgE blood tests against dog and cat were carried out, but these were negative. You examine the boy and observe discrete intercostal retractions and hear that he is wheezing during exhalation upon ausculation. He has a fair amount of eczema. What should you do?]

A [You refer the boy to a pediatric specialist for a prick test in order to obtain full clarification about allergies.]
B [You still suspect that he is allergic and recommend starting him on daily antihistamines on a regular basis.]
C [You assess this as being toddler asthma. In this case it is correct to treat it with an inhaled steroid and a beta 2 agonist.]
D [He is clinically obstructive, but this is a "happy wheezer" and inhaling a beta 2 agonist as-needed would be enough.]

0000163d13936ec0b2

19
[A 3-year old girl who had had atopic eczema and a milk allergy from the age of 8 months visits you, her GP. Before she was put on a dairy-free diet she had suffered from vomiting and stomach ache, but no serious allergic reactions. She is still on a dairy-free diet and her eczema has gradually improved considerably. She no longer needs corticosteroid medication. Her father wonders if she needs any further allergy tests. What should you reply?]

A [Yes, it might be useful to do further IgE blood tests for allergens against milk. If the results are low it might be an indication for doing a milk provocation]
B [Yes, it is time that she starts having milk. Blood tests (IgE) are unnecessary in this assessment.]
C [Yes, but she needs to be referred to a pediatrician because a possible provocation test must be done at a hospital]
D [No, no reason to think that anything has changed. However, she should continue on a dairy-free diet.]

0000163d13936ec0b2

20
[You are a doctor at a health centre. You examine a boy who attends for a 6-month check-up. During examination of his scrotum you find one testicle in the scrotum, on the right side. On the left side you are unable to find a testicle, but possibly feel something in his groin.
What should you do next?]

A [Conclude that the boy does not have a left testicle and no further follow-up]
B [You refer him for an ultrasound scan in order to verify your suspicions about retentio testis before you refer him to a pediatric surgeon/urologist]
C [Refer him to a pediatric surgeon/urologist with suspected retentio testis]
D [Wait for further descent and book the boy in for a check-up when he is 1 year old.]

0000163d13936ec0b2

21
(In your capacity as a primary doctor you are called to see a 4-month old child with Tetralogy of Fallot who has suddenly become extremely cyanotic and has lost consciousness.]
[What measures should you take while you are waiting for the ambulance?]

A [Lay the patient in the foetal position, administer i.m. morphine and oxygen if available]
B [Lay the patient on his/her stomach and administer i.m. morphine from your medical bag]
C [Lay the patient on his/her back and administer i.v. beta blockers from your medical bag]
D [Lay the patient in the recovery position and administer oxygen if available]

0000163d13936ec0b2

22
In your job as GP you see a 3-year old girl who has previously been healthy, and who for the last two weeks has had brusies on her arms and legs. She had a fever and cough a few weeks ago. Normal bowel movements and urination. Had one episode of nose bleed 1 week ago. Has since had slight pain in one foot. At examination you find she is in good general health, temp 38.0°C, no respiratory problems, some bruises on her arms and legs. She also has some small red spots on her calfs that do not disappear when you stretch the skin slightly. Indiividual glands in the neck; largest diameter 5 mm. Normal sounds over the heart, lungs and abdomen. No swelling over the ankles/lower legs/knees. Blood tests give the following results:

Test	Result	Ref. range
Hb	8.5 g/dL	10.5-135 g/dL
MCV	79 fL	75-87 fL
MCH	28.8 pg	23.9-34.1 pg
Tot. leukocytes	8.0 x 109/L	4.0-14.0 x 109/L
Granulocytes	0.8 x 109/L	1.5-7.5 x 109/L
Thrombocytes	25 x 109/L	145-390 x 109/L
CRP	<5 mg/L	< 5 mg/L
Creatine	30 µmol/L	23-37 µmol/L

What is the most probable diagnosis?

A Henoch-Schønlein/allergic purpura (HSP)
B Acute lymphoblastic or myeloid leukemia (ALL/AML)
C Idiopathic/immune thrombocytopenic purpura (ITP)
D Hemolytic uremic syndrome (HUS)

0000163d13936ec0b2

23
[A previously healthy 45-year-old man visits you at the GP's office due to problems with urination. During the last few months he has observed a noticeable reduction in pressure. He also needs to get up once during the night, but quickly falls asleep again. You examine his prostate, but cannot feel any signs of a tumour. What is the most correct thing to do?

A [You take a urine sample and recommend a PSA test and the patient is given another appointment in a week's time]
B [You take a urine sample and when the results of the dipstick test are negative you recommend alpha blockers in order to improve his urination problems]
C [You take a urine sample and when the results of the dipstick test are negative you recommend alpha reductase inhibitors in order to improve his urination problems]
D [You ask the patient to fill out IPSS and micturation questionnaires and arrange for a check-up in one weeks' time]

0000163d13936ec0b2

24
[What type of urinary tract cancer is most likely be found when investigating macroscopic haematuria?]

A [Cancer of the ureter/renal pelvis]
B [Bladder cancer]
C [Prostate cancer]
D [Kidney cancer]

0000163d13936ec0b2

25
[What are the most common symptoms of an acute, uncomplicated kidney stone attack?]

A [Colicky pain, vomiting, restlessness]
B [Colicky pain, urine retention, microhaematuria]
C [Colicky pain, macrohaematuria, cold sweats]
D [Colicky pain, fever, vomiting]

0000163d13936ec0b2

26
[You are a GP for a man in his 50s who is suffering from recurring kidney stones. He has been informed that he is producing calcium oxalate stones. He would like some advice and is wondering if he can do anything in order to prevent stone attacks. What advice should you give?]

A [You advise the patient to drink a lot of water]
B [You advise the patient to take sodium bicarbonate in order to make the urine more alkaline]
C [You advise the patient to reduce his intake of foods containing calcium, especially dairy products such as milk and cheese]
D [You advise the patient to reduce his intake of food with a high salt and sugar content)

0000163d13936ec0b2

27
[A 60-year old man comes to you, his GP, because he has heard that there is a blood test that can be used for checking to see if you have prostate cancer. He has mild LUTS symptoms with a slightly reduced flow presure, but he does not have a family history of prostate cancer. You inform him about PSA testing which is easy to do, but that it is not very sensitive or specific for prostate cancer and the levels can be slightly elevated for benign reasons. He wants to have his PSA levels tested and wonders if there are other options available for ruling out prostate cancer. What should you do?]

A [Do two PSA tests with a few weeks in between them. Do not palpate the prostate since this is not precise.]
B [Palpate the prostate and order an MRI scan of the prostate. Only do a PSA test if palpation or imaging diagnostics are pathological.]
C [Palpate the prostate and order a PSA test regardless of the palpation findings, because the patient still wants it after being informed about the advantages and disadvantages of the test.]
D [Do not do a PSA test due to low sensitivity and specificity and instead palpate the prostate and order a CT scan of the prostate.]

0000163d13936ec0b2

28
An ultrasound scan has shown that a patient has a 2 cm tumour on one of his testicles. A CT scan of his abdomen/pelvis/thorax shows normal conditions. His blood tests with tumour markers are normal. What will the next intervention be now?

A [Scrotal orchiectomy]
B [Open biopsy and a frozen section. In cases of cancer the testicle is removed.]
C [Inguinal orchiectomy]
D [Needle biopsy of the tumour]

0000163d13936ec0b2

29
[What is paraphimosis?]

A [Phimosis with oedema and balanitis.]
B [Phimosis where the foreskin cannot be retracted.]
C [Foreskin which is fixed proximal to the glans with oedema.]
D [Phimosis with lichen sclerosus et atrophicus.]

0000163d13936ec0b2

30
[A 19-year-old boy pays an emergency visit to the doctor's surgery suffering from severe pain in his scrotum. Upon examination testicular torsion is suspected.
How should this patient be treated?]

A [Operation within 6 hours to fix both testicles]
B [Operation to fix the relevant testicle within 6 hours of the symptoms appearing.]
C [Always confirm the diagnosis with a doppler ultrasound test, followed by the operation, preferably within 6 hours]
D [Operation to fix the relevant testicle as quickly as possible within 3 hours of the symptoms appearing.]

0000163d13936ec0b2

31
[When a man is diagnosed with prostate cancer the aggressiveness of the disease is decisive for his future treatment. It can be hard to make a decision when the aim is to minimise both over and under-treatment. In addition the patient should also be included in the decision. Comorbidity and the expected life prognosis are important aspects of such decisions. What is the correct treatment for low-risk prostate cancer?]

A [Radical prostatectomy or radical radiation treatment.]
B [When low-risk prostate cancer is diagnosed the patient should be offered active monitoring]
C [Watchful waiting until progression of the disease indicates that the patient should be treated.]
D [Neoadjuvant chemotherapy followed by radical prostatectomy.]

0000163d13936ec0b2

32
[A 73-year old man has been diagnosed with muscle invasive bladder cancer during a transurethral resection (TUB-B). He is otherwise fit and healthy. A CT scan of his thorax/abdomen/pelvis has not shown any signs of metastases.
What treatment should this patient receive?]

A [Intravesicle immunotherapy with a 6-week Bacille Calmette-Guerin (BCG) induction course]
B [Either a radical cystoprostatectomy or radiation treatment]
C [Another transurethral bladder resection (TUB-B) within 4-6 weeks]
D [Cystocopy check-up in 3 months]

0000163d13936ec0b2

33
You are on duty in A&E when a 63-year-old man is admitted due to a poor state of general health. He suffers from type 2 diabetes, hypertension and periodic alcohol abuse. He has been admitted with acute pancreatitis on two previous occasions. He now denies having drunk any alcohol recently. He is accompanied by his wife who confirms this.
Upon arrival he is very exhausted, BP 85/55, p 80, afebrile, thin and appears to be dehydrated.
His medication is as follows: metformin, amlodipine (ca-antagonist), creon (digestive enzyme) og total vit B.
Arterieal blood gas:

	Test results	Ref. range
pH	6.96	7.38-7.46
pO2	17.8	> 10.6
pCO2	1.72	4.3-6.0
Bicarbonate	2.9	21-27
BE	-2	-3 to +3
Lactate	12.9	0.5-2.2

Venous tests:

	Test results	Ref. range
Creatinine	919	60-105
eGFR	<5	≥90
Carbamide	40	3.5-8.1
Potassium	7.5	3.6-4.6
Lipase	28	26-64
Glucose	7.8	4.2-6.3

You calculate the anion and osmolarity gaps which are both normal (corrected for high carbamide). What is the likely cause of the acidosis?

A [Acute pancreatitis]
B [Metabolic acidosis due to acute, prerenal kidney failure]
C [Intoxication with toxic alcohol (ethylene glycol or metanol]
D [Metformin-induced lacto acidosis]

0000163d13936ec0b2

34
[A 79-year-old man has been suffering from hypertension for many years and had a myocardial infarction 5 years ago. During the last few weeks he has been taking NSAIDs for pain in one of his knees. His creatinine levels have been gradually increasing during the last 5 years from approx. 70 to 115 micromol/l the last year (ref. range 60-105).
Urine dipstick test = 2+ for albumin, otherwise negative results for blood and leucocytes. His albumin/creatinine ratio is 87 mg/mmol (ref. range <3).
His GP has referred him for an ultrasound scan which shows that the size of his kidneys is slightly reduced bilaterally. 2-3 simple cysts are visible on both kidneys, no obstacles in the outlets.
What kidney disease is most likely?]

A [Interstitial nephritis caused by NSAIDs]
B [Chronic glomerulonephritis]
C [Hypertensive nephrosclerosis]
D [Polycystic kidney disease]

0000163d13936ec0b2

35
(What conditions can result in rapidly progressive glomerulonephritis (RPGN) with crescentic formation?)

A [ANCA vasculitis, anti-GBM nephritis, IgA nephritis, SLE]
B [ANCA vaculitis, anti-GBM nephritis]
C [ANCA vasculitis, anti-GBM nephritis, IgA nephritis, SLE, post-streptococcal nephritis]
D [ANCA vasculitis, IgA nephritis, SLE]

0000163d13936ec0b2

36
[You have just been visited by a patient (65-years old) for the 3rd BP measurement and their average reading is 160/80 mmHg. You are now going to undertake a simple examination before you start treatment.
Which tests would it be most correct to order in this situation?]

A [Blood tests: creatinina, HbA1c, total cholesterol
Urine: u-albumin/creatinine ratio]
B [Blood tests: creatinine, Na, K, HbA1c, total cholesterol, HDL cholesterol, uric acid, aldosterone, renin, TSH, free T4
Urine: U-dipstick, u-albumin/creatinine ratio
]
C [Blood tests: creatinine, K, HbA1c, total cholesterol, HDL cholesterol, uric acid, aldosterone, renin
Urine: u-albumin/creatinine ratio]
D [Blood tests: creatinine, Na, K, HbA1c, total cholesterol, uric acid
Urine: u-dipstick, u-albumin/creatinine ratio]

0000163d13936ec0b2

37
You have a male patient (35 years old) whose BP results are 150/95 (average from 3 consultations). He feels slightly short of breath upon exertion. He is otherwise fit and healthy and is a non-smoker, but he is overweight (BMI 32) and and does not see that he has any opportunities for losing weight.
His laboratory tests show the following results:

		ref. range
Na	140 mmol/l	135-145
K	3.7 mmol/l	3.5-4.5
Creatinine	81 umol/l	60-105
HbA1c	40 mmol/mol	28-40
Total cholesterol	6.7 mmol/l	3.5-6.9
u-dipstick	neg	neg
u-albumin/creatinine ratio	4 mg/mmol	<3

How should this patient be treated in the future?

A [Start moderate doses of both calcium blockers and angiotension receptor inhibitors (e.g. 5 mg x 1 amlodipine and 16 mg x 1 atacand) because his pressure needs to be reduced by approx. 20-25 mmHg]
B [Start moderate doses of beta blockers (e.g. 100 mg x 1 metoprolol depot) due to dyspnea/heart failure]
C [No treatment necessary because he is young and only has stage 1 hypertension, i.e. low total cardiovascular risk.]
D [Start moderate doses of both calcium blockers and tiazide (e.g. 5 mg x 1 amlodipine and 12.5 mg x 1 esidrex) because he does not have proteinuria and his pressure needs to be reduced by approx. 20-25 mmHg]

0000163d13936ec0b2

38
(A 50-year-old women with a kidney transplant which function is stable. Normally her creatinine levels are around 100. For several weeks she has been experiencing increasing fatigue and lethargy. She is moderately short of breath, has a dry cought, but no temperature.
Her blood tests show (ref. range in brackets):
CRP 35 mg/l (<5),
Blood gas pO2 8.2 kPa (11.0-14.4),
D-dimer 0.4 (< 0.5),
Creatinine 120 micromol/l (45-90).
What is the most likely diagnosis?

A Influenza
B Pneumocystis jirovecii
C Pulmonary embolism
D Bacterial pneumonia

0000163d13936ec0b2

39
[A 50-year-old man visits his doctor due to increased oedema in his legs and lethargy. No known additional illnesses.
This could be nephrotic syndrome.
In addition to oedema, what other 2 criteria are required in order to make a diagnosis of nephrotic syndrome?]

A [High blood pressure, high creatinine (low eGFR)]
B [Hypoalbuminemia, proteinuria > 3g/d]
C [High blood pressure, proteinuria (1g/d)]
D [Hematuria, mild proteinuria (u-dipstick 1+)]

0000163d13936ec0b2

40
The health of an old man has been declining during the past year and his general state of health is deteriorating. He visits his GP who take blood tests for information purposes. These show the following results:

	Results	Ref. range
Hgb	7.3 g/dl	13.5 - 17.4
Creatinine	450 µmol/L	60 - 120
eGFR	10 mL/min/1.73m^2	≥90
Bicarbonate in venous blood	20 mmol/L	24-31
Potassium	5.2 mmol/l	3.3 - 4.3

Which of these differences is it most important to do something about (i.e. what should be done first)?

A [His hyperkalemia should be treated by starting him on a glucose-insulin infusion]
B [He should start taking bicarbonate tablets in order to treat his metabolic acidosis, avoid skeletal damage and prevent the progression of his kidney disease]
C [Dialysis should be started so that his s-creatinine levels are reduced and any toxic small molecular substances are removed (uremic toxins)]
D [His anaemia should be corrected, probably by transfusing 2 units of blood]

0000163d13936ec0b2

41
(A 74-year old women is admitted to A&E due to a decline in her general state of health/she is unable to manage at home. Upon arrival her s-creatinine level is 320 umol/l (reference range: 45 - 90 umol/l), something which indicates acute kidney damage since her kidney function was previously normal. In this situation is is important to be able to distinguish between prerenal kidney failure and acute renal tubular necrosis (the most common renal cause of acute kidney damage). Clinical suspicion of acute renal tubular damage/necrosis and the plan is to give her relatively moderate quantities of liquid supplements. What are the typical urinary findings associated with such damage?]

A [Relatively low u-Na and relatively low urinary osmolarity]
B [Urine dipstick Blood ++, urine dipstick albumin +++]
C [Extremely high u-Na and high urinary osmolality]
D [Relatively high urinary Na and relatively low urinary osmolarity]

0000163d13936ec0b2

42
[You are the GP for a 30-year-old woman who was previously fit and healthy and who has just been admitted to the Medical Ward with stomach pain and a diagnosis of "polycystic kidney disease". She was given a bit of information when she was discharged, but she does not remember much of what was said, apart from being told that her kidneys were very large (approx 25 cm lengthwise). You therefore have to provide her with the information again.
What best describes her situation?]

A [There is a 25% chance that her children will inherit the disease. There is a high risk that she will end up having dialysis and there are no treatments which could delay the development.]
B [There is a 25% chance that her children will inherit the disease. There is a high risk that she will end up having dialysis, but there is a treatment that could probably delay the development.]
C [There is a 50% chance that her children will inherit the disease. There is a low risk that she will end up having dialysis, and there are no treatments that could delay the development.]
D [There is a 50% chance that her children will inherit the disease. There is a high risk that she will end up having dialysis, but there is a treatment that could probably delay the development.]

0000163d12936ec0b2

43
[What is macroprolactin?]

A [Extra large prolactin peptides without biological activity]
B [Large molecular prolactin complexes with low biological activity]
C [Extra large prolactin peptides with high biological activity]
D [Large molecular prolactin complexes with high biological activity]

0000163d13936ec0b2

44
[You suspect that a patient has Graves' disease (hyperthyreosis).
What tests would be relevant to order?]

A [Thyroid stimulating hormone (TSH) in serum
Free thyroxine (FT4) in serum
Iodine in urine

Genetic testing]
B [Autoantibodies to the TSH receptor in serum
Thyroid stimulating hormone (TSH) in serum
Free triiodothyronine (FT3) in serum
Free thyroxine (FT4) in serum]

C [Autoantibodies to the TSH receptor in serum
Thyroid stimulating hormone (TSH) in serum
Free triiodothyronine (FT3) in serum
Iodine in the urine]

D [Autoantibodies to the TSH receptor in serum
Thyroid stimulating hormone (TSH) in serum
Free thyroxine (FT4) in serum
Antibodies to thyroid peroxidase (anti-TPO) in serum]

0000163d13936ec0b2

45
Blood tests are taken for a woman in her 12th week of pregnancy who is suffering from severe nausea. They show free T4 of 30 pmol/l (ref 13.5-21.2), TSH <0.01. TSH receptor antibodies/TRAS is negative. What do you do?

A [Start on carbimazole and beta blockers]
B [Repeat the tests in 3-4 weeks' time]
C [Start on carbimazole.]
D [Offer beta blockers.]

0000163d13936ec0b2

46
25-year-old woman with hyperthyreosis with diffuse goiter and mild ophthalmopathy diagnosed 3 years ago. Subsequently treated continuously with fairly high doses of carbimazole, plus 100 µg thyroxin daily after a while. An unsuccessful attempt to discontine this treament was followed by a rapid relapse. During the last 3 months she has suffered from increased hyperthyreosis, increased goiter and increased bilateral exophthalmos.
Now: FT4 23.3 pmol/L (ref 13.5-21.2), FT3 12.6 pmol/L (ref 3,5-6,5) , TSH < 0.01 mIE/L. TRAS 16 IU/L (ref 0-3,3). She is taking 20 mg x 2 carbimazole plus 100 µg thyroxin daily. What type of treatment should she have?

A [Thyroidectomy]
B [Carbimazole - titration treatment]
C [Radioactive iodine treatment]
D [No changes in treatment]

0000163d13936ec0b2

47
[A 25-year-old woman attends the doctor's surgery suffering from dizziness. She has lost 5 kg in weight and her general state of health has declined. Her blood pressure is 90/60, pulse 100. Her p-sodium levels are low, 129 mnol/l (ref. 137-145). You suspect primary adrenocortical insufficiency and requisition additional tests in order to confirm your suspicions. How would you expect her cortisol, ACTH, aldosterone and renin levels to be affected in primary adrenocortical insufficiency?]

A (Cortisol (low), ACTH (low), aldosterone (high), renin (low))
B (Cortisol (low), ACTH (high), aldosterone (high), renin (high))
C (Cortisol (low), ACTH (high), aldosterone (low), renin (high))
D (Cortisol (low), ACTH (high), aldosterone (low), renin (low))

0000163d13936ec0b2

48
[A 55-year-old man has had high blood pressure for a long time and it has been difficult to treat it. He has suffered from attack-like symptoms with palpitations, sweating and anxiety. He has been diagnosed with a heterogenous tumour in his left adrenal gland. Blood tests are taken with regard to diagnosis.
Which of these answers would you expect to find in the patient?]

A [Elevated aldosterone]
B [High catecholamine levels]
C [High cortisol and low ACTH]
D [High cortisol and high ACTH]

0000163d13936ec0b2

49
(A 36-year-old man visits you with questions about testosterone deficiency and request for substitution. He is tired and complains of having erectile problems. Gradual weight increase, now BMI 34.2 kg/m2. He is not taking any regular medication. Blood pressure 158/88, p 74.
You carry out the following fasting blood tests: LH 3.4 IE/l (0.9-8.4), FSH 4.9 IE/L (1.3-17.9), testosterone 7.6 nmol/l (6.73-3.,9) og SHBG 12 nmol/l (ref. 13-72).
How would you interpret the tests?

A [Primary hypogonadism]
B [Hypogonadism with Klinefelter syndrome]
C [Secondary hypogonadism]
D [Normal]

0000163d13936ec0b2

50
(A 59-year old man who had an NSTEMI heart attack 3 months ago, is overweight (BMI 31.6 kg/m2). He was recently admitted due to his poor general state of health and dehydration and was given a diagnosis of diabetes with HbA1c levels of 106 mmol/mol (diabetes ≥48) and p-glucose 32.2 mmol/l (4.2-6.2 mmol/L). He has been started on insulin, Humulin NPH 10 U x 2. After he returned home the answers to his autoantibody tests arrived and these were negative, C-peptide 1.0 nmol/l (0.3 - 2.4 nmol/L) with glucose 12.1 mmol/l, normal kidney function. He visits you, his GP, three weeks later. His blood glucose levels have been 10-16 mmol/l when he has measured them at home. No change in his weight, good general state of health.
You inform him about the importance of losing weight and increasing his physical activity. What other changes in his treatment would you recommend?

A [His blood glucose levels are still too high. You start him on increasing doses of metformin tablets and plan to reduce Humulin doses after his next check-up.)
B [His blood glucose levels are still too high. You increase his Humulin dose to 15 U x 2 and add an SGLT2 inhibitor due to his heart disease.]
C [His blood glucose levels are still too high. You increase his Humulin dose to 15 U x 2 and instruct him to continue increasing the dose every 3-4 days.]
D [His blood glucose levels are still too high. You start him on rapid-acting insulin, Novorapid, 5 U before meals.

0000163d13936ec0b2

51
[A 26-year old man is admitted with suspected diabetic ketoacidosis. He weighs 62 kg and has lost 7-8 kg over the course of 2 months. There is a smell of ketones in the room and his urine dipstick test is positive for ketones. A capillary blood glucose measurement shows blood glucose level of 20. An arterial blod gas test is taken (see below).
What condition is present and which initial treatment do you commence?]

	Verdi	Trend	Referanse
pH	6,946	↓↓	7,38-7,46
pCO2	1,09	↓	4,3-6 kPa
pO2	19	↑	11-14,4 kPa
HCO3-	1,8	↓↓	21-27 mmol/l
BE	-30,4	↓↓	-3 – 3 mmol/l
Anion Gap	25,2	↑	10-16 mmol/l
Na	137	(↓)	137-145 mmol/l
K	4,5	=	3,5-4,6 mmol/l
Glukose	23,1	↑↑	4-6,3 mmol/l
Laktat	1,2	=	0,5-2,1 mmol/l

A [Hyperosmolar hyperglycaemic syndrome. Start rehydration with NaCl 0.9% prior to starting intravenous insulin.]
B [Moderate diabetic ketoacidosis. Start rehydration with NaCl 0.9% prior to starting intravenous insulin.]
C [Severe diabetic ketoacidosis. Start rehydration with NaCl 0.9% prior to starting intravenous insulin.]
D [Other cause of acidosis than diabetes. Start rehydration with NaCl 0.9%]

0000163d13936ec0b2

52
[Which statement about long-term diabetic complications is correct?]

A [Patients with insulin-dependent diabetes and established cardiovascular disease should always aim to have HbA1c levels of around 53 mmol/mol]
B [All long-term complications are avoided when HbA1c levels are 53 mmol/l thoughout one's life.]
C [SGLT2-inhibitors and/or GLP-1 analogues can reduce the risk of cardiavascular disease in patients with type 2 diabetes]
D [Poor glucose regulation in youth has no impact on the development of long-term complications provided good regulation in adulthood.]

0000163d13936ec0b2

53
[A 42-year-old woman is admitted by her GP with recently diagnosed severe hypertension, blood pressure 215/120 mmHg. She has been lethargic and exhausted during the past year and her weight has increased to 93 kg (BMI 31.6 kg/m2). She is not taking any medication. You examine her to investigate the causes of her high blood presesure and hormone testing shows that she has Cushing's syndrome.
What is the most common cause of Cushing's syndrome (not including pharmacological treatment with steroids)?]

A [Adrenal carcinoma]
B [Adrenal adenoma]
C [Pulmonary tumour with ACTH production]
D [Pituitary adenoma]

0000163d13936ec0b2

54
(A patient with known primary adrenal cortex insufficiency is admitted in a poor state with hypotension, hyponatremia (125 mmol/l) and elevated potassium levels of 5.5 mmol/l. You suspect an Addison's crisis. How do you treat this?]

A [Introvenous hydrocortisone (Solu-Cortef) and an oral mineralcorticoid (Florinef)]
B [Oral cortisone acetate and intravenous isotonic sodium chloride solution]
C [Intravenous hydrocortisone (Solu-Cortef), intravenous isotonic sodium chloride solution and a mineralcorticoid (Florinef)]
D [Intravenous hydrocortisone (Solu-Cortef) and intravenous isotonic sodium chloride solution]

0000163d13936ec0b2

55
[A 46-year-old woman is experiencing occasional secretions from her left breast. She describes the secretions as being yellow and slightly milky. This is worrying her and she wonders if it could be dangerous. Her grandmother had breast cancer in her 70s.
Is it necessary to investigate this?]

A [Yes, this could be symptomatic of a lump in one of the milk ducts]
B [Yes, secretions from the breast such as this could be symptomatic of breast cancer.]
C [Yes, she should be investigated since there has been a case of breast cancer in the family]
D [No, these are entirely normal secretions and an investigation is not necessary]

0000163d13936ec0b2

56
[A 33-year-old woman has been diagnosed with breast cancer. The lump is approx. 3.5 cm in size. It is not very easy to feel it because she has fairly large breasts. Palpation and an ultrasound scan have not found anything wrong in the axillary tissue). The patient is otherwise fit and healthy and there are no other cases of breast cancer in her family. She will have a surgery before having any further treatment.
What procedure is most relevant for her?

A [She should have a mastectomy and axillary dissection]
B [She should have a breast-conserving surgery and axillary dissection]
C [She should have a mastectomy and a sentinel lympy node biopsy]
D [She should have a breast-conserving surgery and a sentinel lymph node biopsy]

0000163d13936ec0b2

57
(A 49-year-old woman visits you, her GP, after she discoveres a lump in one of her breasts. The lump is approx. 1.5 cm in size, slightly hard, slightly difficult to delineate and moves in relation to the surrounding tissue. There are no palpable supravclavicular lymph nodes.
How should this be dealt with?]

A [These is clinical suspicion of breast cancer and the patient should be referred to a breast screening centre for an examination. The centre would carry out a mammography, ultrasound scan and biopsy.]
B [Breast cancer is clinically suspected and the patient should be referred to a breast screening centre for an examination. The centre would carry out a CT scan, MRI scan or a PET scan in order to confirm the diagnosis.]
C [Breast cancer is clinically suspected, but she could wait to be invited to attend the mammogram screening programme. She will soon be 50 years old and it would not take long before she is called in.]
D [There is clinical suspicion of breast cancer and the patient should be referred for an MRI scan of her breast. If these suspicions are confirmed she should be referred on to a breast screening centre.]

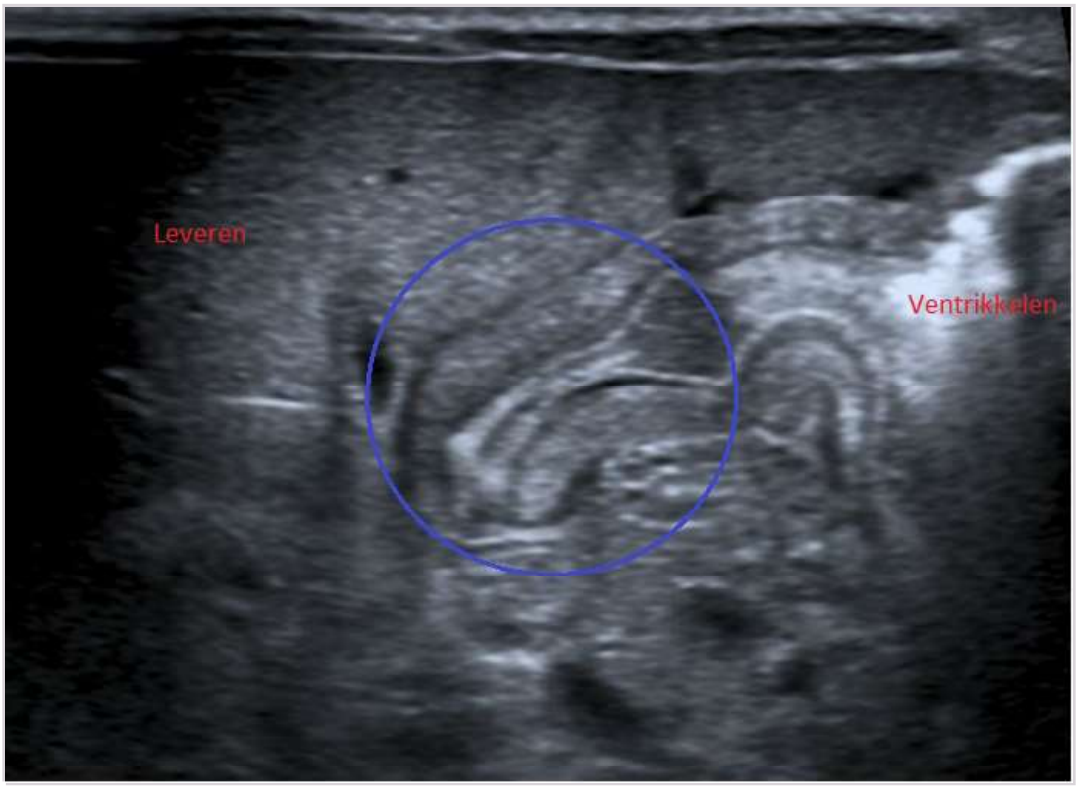
0000163d13936ec0b2

58
[A patient has discovered a lump in her throat. On palpation you feel a well-delineated, non-tender, fairly soft lump approx. 2 cm in size in her left thyroid lobe. The patient is not bothered by this, but was slightly worried when she discovered it.]

A [Yes, this should be investigated. Her GP should refer her for thyroid scintigraphy in order to find out if this is a warm or a cold node. This would clarify whether or not it is cancer.]
B [Yes, this should be investigated. Her GP takes blood samples in order to investigate her metabolism. The patient should also be referred for a CT scan of her throat in order to obtain clarification about whether or not this is cancer.]
C [No, this does not require further investigation. Since she is not having any problems it is highly unlikely that this is a serious disease. The patient will be asked to contact you if she experiences any problems.]
D [Yes, this should be investigated. Her GP takes a blood sample in order to investigate her metabolism. The patient should also be referred to the thyroid outpatient clinic for an assessment, including an ultrasound scan. It might also be necessary to perform a fine needle aspiration biopsy of the lump.]

0000163d13936ec0b2

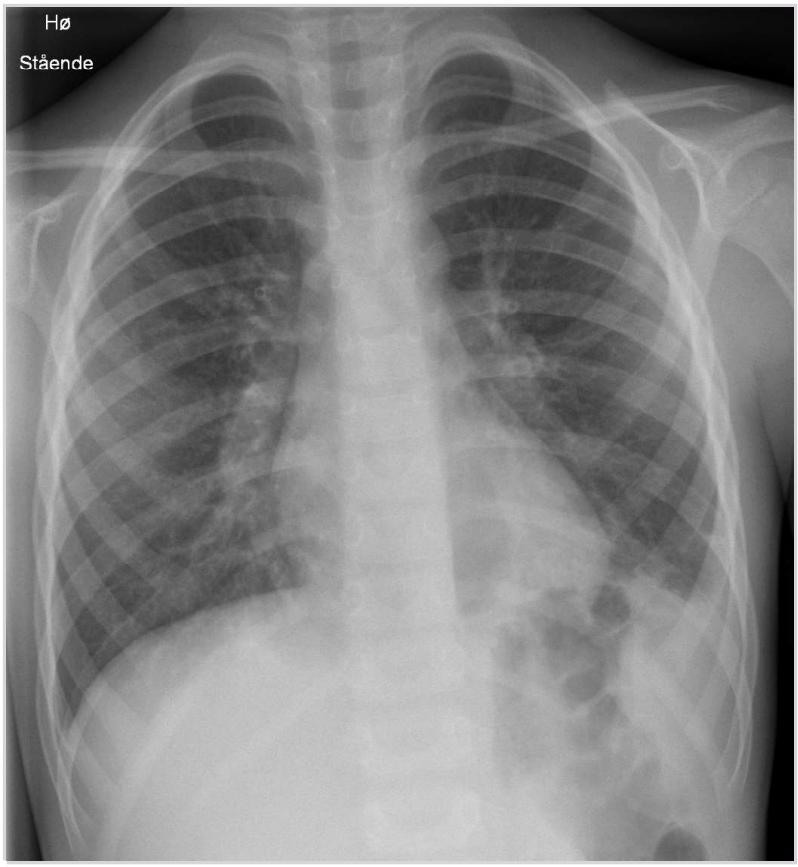
59
[In your capacity as a registrar in the Children's Surgical Department you receive a transfer patient from Finnmark Hospital. The patient is a boy who is almost 6 weeks old and who has been having increasing "wet burps" during the last week. He has lost a bit of weight. You insert a nasogastric tube and a lot of air and milky aspirate is returned.
You request an ultrasound scan of his abdomen. The radiologist writes: "No passage of stomach contents detected through a thickened pyloric muscle" (blue ring in the photo below).
What condition is this?]

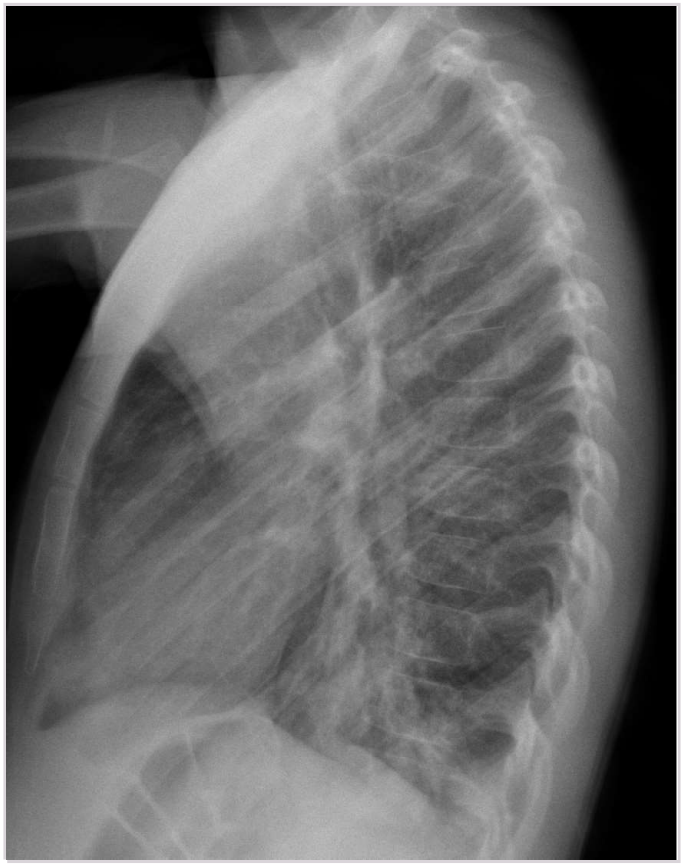


A [Intestinal malrotation]
B [Gastroesophageal reflux (GER)]
C (Invagination]
D [Hypertrophic pyloric stenosis (HPS)]

0000163d13936ec0b2

60
[In your capacity as a resident in the children's reception centre you see a 4-year old boy who has a 10-day history of respiratory tract symptoms. Cough without mucus, a temperature and an impaired general state of health. Upon auscultation you can hear reduced respiration sounds on his right side midways and basally.
You request an X-ray of his thorax. What does this show?]


Hø
Stående



A [Bilateral peripheral pulmonary thickening]
B [Basal atelectasis in the lower right lobe]
C [Right-sided perihilar pulmonary thickening]
D [Loosely saturated pulmonary thickening basally in the lower left lobe]

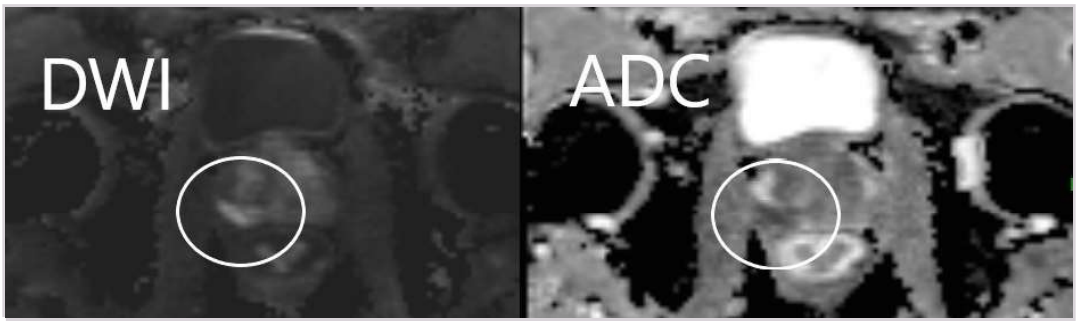
0000163d13936ec0b2

61
[Congenital anomalies of the kidney and urinary tract (CAKUT) represent 20-30% of all anomalies that are found in prenatal ultrasound scans.
Which of these conditions belongs to the "non-hydronephrotic kidney anomalies?)

A [Duplication of the renal collecting system]
B [Horseshoe kidney]
C [Rear urethral flaps]
D [Transitional stenosis]

0000163d13936ec0b2

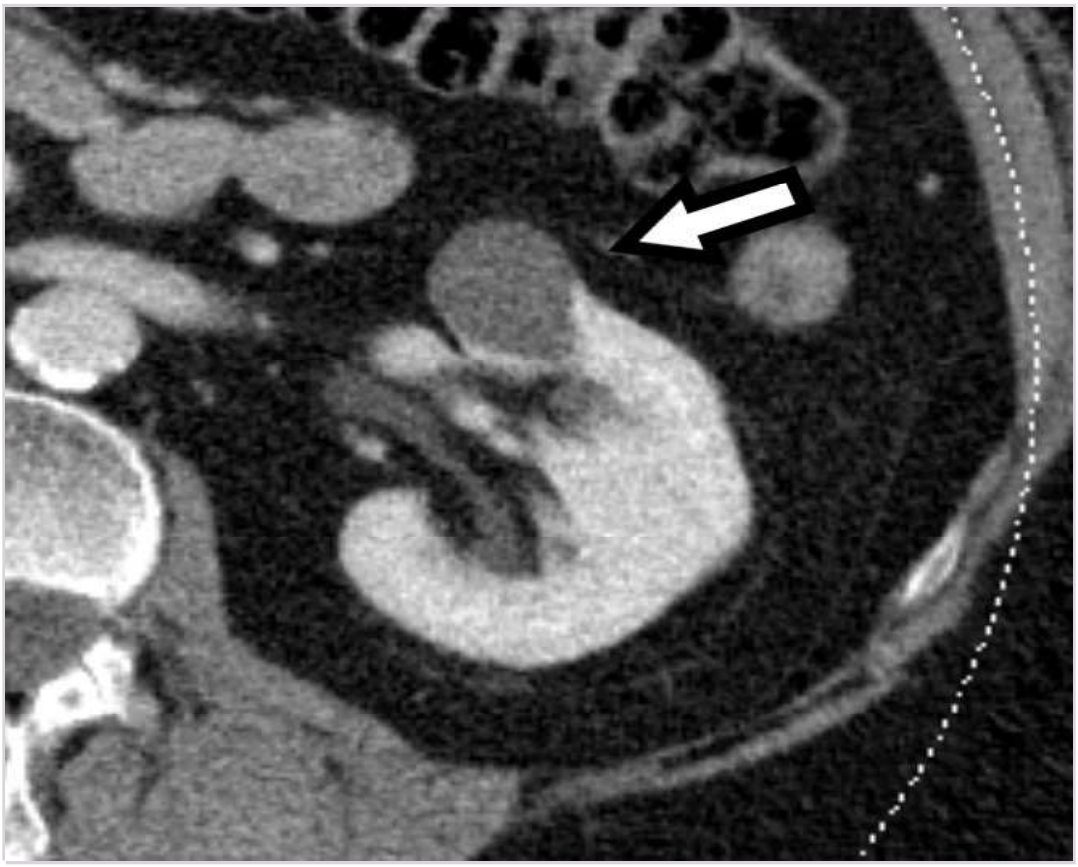
62
[A 72-year-old man is examined for suspected prostate cancer. On the attached photos you will see a diffusion sequence (DWI) with a high diffusion gradient (b1500) on the left and an accompanying ADC map on the right. The white ring encircles an area in the prostate with a clear increase in the signal at b1500 and a correspondingly clear low signal on the ADC map. What does the diffusion series indicate in this case?]



A [Increased diffusion, in this case suspected prostate cancer]
B [Diffusion restriction, in this case suspicion of prostate cancer]
C [Diffusion restriction, but does not contribute to the assessment of malignancy]
D [Increased diffusion, but does not contribute to the assessment of malignancy]

0000163d13936ec0b2

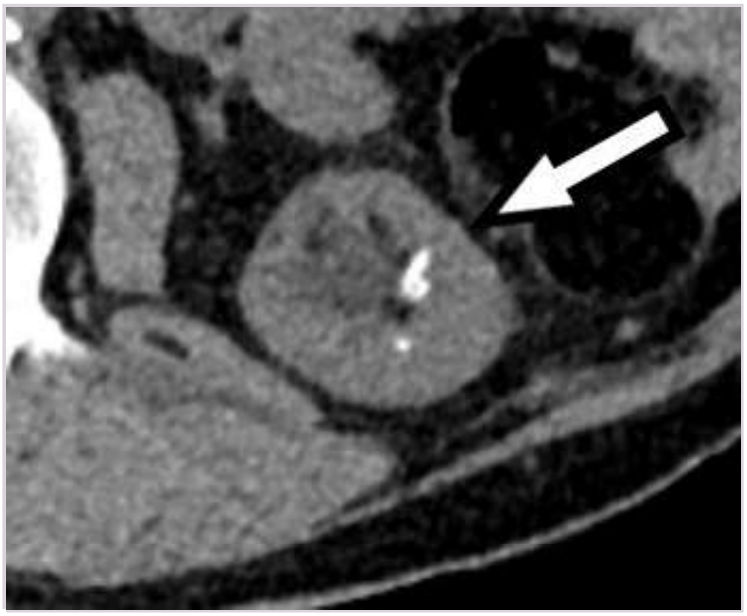
63
[As requested by her GP, a 59-year-old woman has had a CT scan carried out of her abdomen/pelvis for non-specific stomach pain in her right hyperchondrium. You take a look at the images and find the lesion on the image below in her left kidney. The lesion is well-delineated and homogenous with a density of 6 HU. No septation and no calcification or noduli along the edge. The largest measure is 2.9 cm. A medical student who is accompanying you while you are on call asks if this should be investigated further, checked and/or treated. What is your answer?]



A [To be investigated further with a CT scan of the urinary tract within a few weeks in order to exclude malignancy.]
B [No indications for further investigation, check-up or treatment.]
C [Refer for an ultrasound guided biopsy]
D [Check-up with a CT scan of the urinary tract in 1 year's time]

0000163d13936ec0b2

64
[A 73-year-old man who has previously had several urinary tract concretion formations arrives in the Urology Outpatient Clinic with recurring back pain which is similar to previous kidney stone attacks, as well as recurring urinary tract infections. A CT scan without contrast medium is taken of his urinary tract which shows a 9 mm concretion in the lower calyx group on his left kidney which measures approx. 950 HU, as shown on the photo below. What treatment of the concretion do you refer the patient for?



A [Cystoscopy or ureterorenoscopy (URS) with a JJ stent]
B [Ureterorenoscopy (URS) using a laser]
C [Breaking up the kidney stones by using ultrasound (extracorporeal shock wave lithotripsy = ESWL.]
D [Percutaneous nephrolithotripsy (PCNL)]

0000163d13936ec0b2

65
[In children MRI images change quite a lot during the first two years of life due to normal myelination. What is correct?

A [The T1 signal in the white matter becomes lower and the T2 signal higher]
B [Both the T1 and T2 signals in the white matter become lower]
C [The T1 signal in white matter is higher and the T2 signal is lower.]
D [Both the T1 and T2 signals in the white matter become higher]

0000163d13936ec0b2

66
[A 3-year-old boy is admitted as an acute emergency under dramatic circumstances due to acute loss of consciousness. He is still unconscious on arrival at the hospital. You take a CT scan of his head as quickly as possible and this shows a fresh hematoma in the cerebellum.
What is the most likely cause?]

A [Spontaneous primary brain haemorrhage]
B [Hypertensive haemorrhage]
C [Underlying tumour or vascular malformation]
D [Coagulation disorder / haematological cause]

0000163d13936ec0b2

67
You have sent a 15-year-old girl to an MRI of the head due to prolonged migraine. The result of the investigation says that the pituitary is slightly enlarged with some protrusion/bulging of the upper pituitary contour, height 9 millimeters.
What is the most likely explanation for this finding?

A Lymphocytic hypophysitis
B "Rathke's Cleft" cyst
C Physiological enlargement in puberty
D Pituitary adenoma

0000163d13936ec0b2

68
[What constitutes the greatest risk for monochorionic diamniotic twins (MCDA) in utero?]

A [The navel cords of the twins become intertwined]
B [Not enough space for both twins]
C [Twin-twin transfusion symdrome]
D [Infection in one twin, which can spread to the other one]

0000163d13936ec0b2

69
[Benign prostatic hyperplasia can cause urinary tract symptoms and occurs frequently in elderly men. What are common microscopic changes for this condition?]

A [Hyperplasia of glands, smooth musculature and fibrous tissue]
B [Hyperplasia of stroma which displaces small atypical groups of gland tissue]
C [Untidy arrangement of glands and small groups of epithelial cells]
D [Hyperplasia of glands surrounded by sparse stromal tissue

0000163d13936ec0b2

70
[A 24-year-old man has a 5 cm tumour in the right half of his thyroid gland. It is removed surgically and molecular pathological examination of the tissue shows that he has a BRAF V600E gene mutation. What is the most likely diagnosis?]

A [Papillary carcinoma]
B [Subacute granulomatous thyroiditis]
C [Hyperplasia (Graves' disease]
D [Lymphatic thyreoditis]

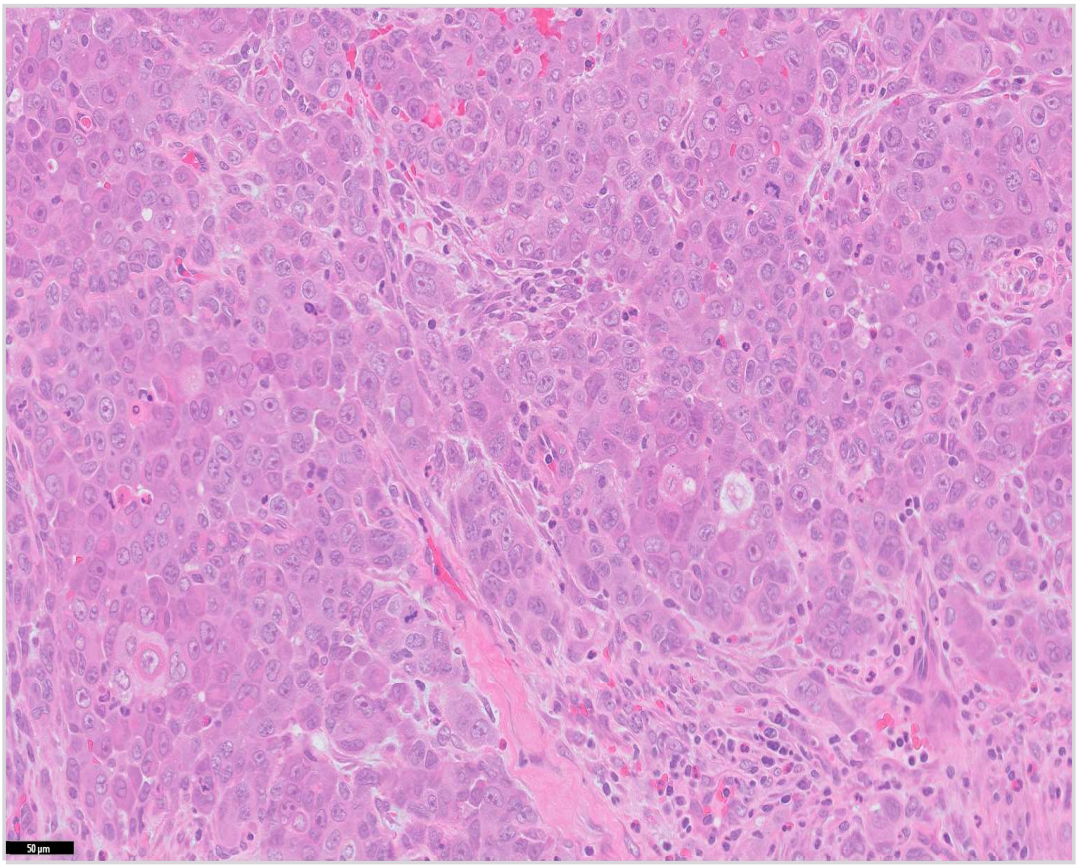
0000163d13936ec0b2

71
[Seminomas are the most frequently occurring type of testicular cancer.
At what age is this type of tumour most common?]

A [50-70 years]
B [30-50 years]
C [10-30 years]
D [Over 70 years]

0000163d13936ec0b2

72
[A 55-year-old woman is examined due to microscopic hematuria. A cystoscopy shows changes in the mucus membrane and a transurethral bladder resection is performed. Below is a photo of the bladder wall (hematoxylin-eosin stained section).]

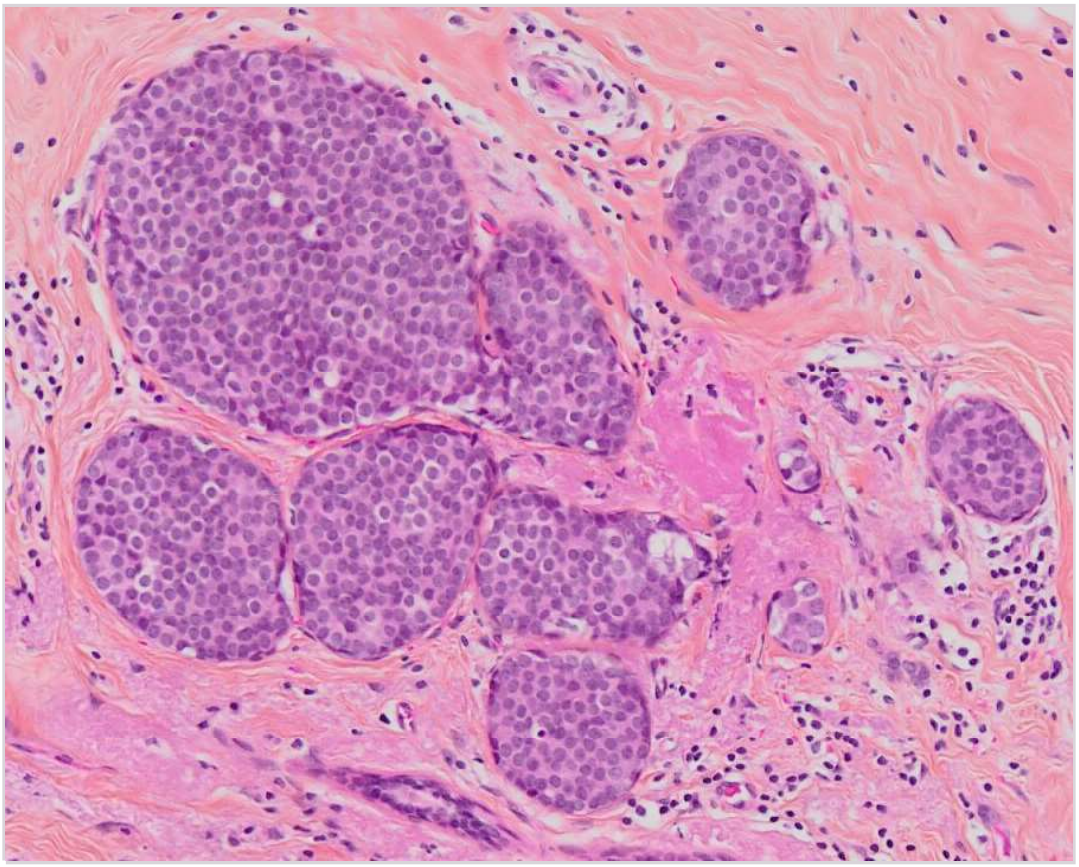


[What is the diagnosis?]

A [Carcinoma in situ in the mucous membrane]
B [Reactive changes due to cystitis]
C [Granulomatous inflammation]
D [High-grade urothelial carcinoma]

0000163d12936ec0b2

73
[The photo shows a lobular carcinoma in situ (LCIS) in a histopathological section of a tumour in the breast of a 48-year-old woman (haematoxylin, eosin and saffron (HES); x 200]

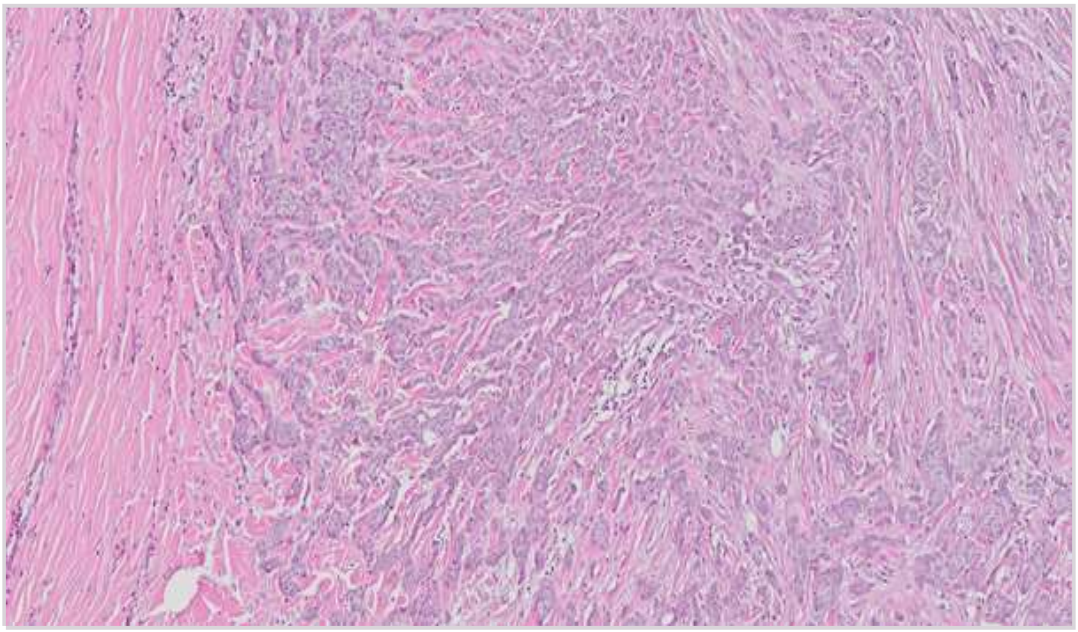


[What characteristics distinguish LCIS from an infiltrative lobular carcinoma?]

A [LCIS has large areas of necrotic tumour cells.]
B [In LCIS the ductal epithelium is hyperplastic, but shows no signs of malignity.]
C [Unlike infiltrative lobular carcinoma, LCIS has cohesive sheets of epithelial cells that are expressly atypical and have extensive mitosis.]
D [There is no penetration of the basal membrane in LCIS.]

0000163d13936ec0b2

74
[A 55-year-old woman is being examined for a lesion which was detected during a mammography. A biopsy is taken before surgery. Below is a photo of the lesion (hematoxylin-eosin stained section)]



[What is the diagnosis?]

A [Ductal carcinoma in situ (DCIS)]
B [Lobular carcinoma in situ (LCIS)]
C [Fibroadenoma]
D [Invasive carcinoma NOS (no special type)]

0000163d13936ec0b2

75
[You are a GP and a woman visits you due to genital itching. In her medical records you read that she has been treated for fungal infections on several occasions with no improvement. Upon clinical examination you see white plaques on the skin of her vulva and as part of the examination a biopsy is taken from one of these lesions. Here is an extract from the microscopic description.
There is hyperkeratosis and basal degeneration of the epidermis, no atypia. There is lymphocyte infiltration in the superficial dermis and areas with oedema and hyalinised connective tissue.
What is the most likely diagnosis?]

A [Lichen sclerosus]
B [Low-grade squamous intraepithelial lesion]
C [Virus infection]
D [Bacterial infection]

0000163d13936ec0b2

76
[You perform a microscopic examination of an ovary with several cysts.
How can you distinguish between endometriosal cysts and cystadenomas?]

A [In endometriosal cysts there is endometrial stroma around the cysts]
B [Cystadenomas have a mucinous lining and show atypia in the epithelium]
C [Cystadenomas have concentric smooth musculature around the epithelium]
D [In endometriosal cysts there is more proliferative epithelium than in cystadenomas]

0000163d13936ec0b2

77
[A 68-year-old woman is diagnosed with an enterococcus faecium infection of the urinary tract. Resistance testing shows that the bacterium is resistant to 3rd generation cephalosporins.]
[What resistance mechanism is this most consistent with?]

A [Changes in antibiotic binding sites]
B [Enzymatic inactivation or modification of antibiotics]
C [Changes in metabolic processes which are inhibited by antibiotics]
D [Reduced uptake of antibiotics]

0000163d13936ec0b2

78
[A 43-year-old man who has recently returned home from Kenya visits A&E with a high temperature. He suspects that he has malaria. You requisition thick and thin blood smears for a malaria microscopy examiantion.]
[What are the advantages and disadvantages of examining thick drop smears compared to thin drop smears.]

A [Lower sensitivity, but more suitable for assessing parasitemia density]
B [Higher specificity, but less suitable for identifying plasmodium malariae]
C [Lower specificity, but more suitable for identifying plasmodium falciparum]
D [Higher sensitivity, but less suitable for assessing parasite morphology]

0000163d13936ec0b2

79
A bagged urine specimen is taken from a 5-month old girl with fever, but no obvious infection sites. This shows the growh of escherichia coli $>10^5$ CFU/ml.
[How should this finding be interpreted?]

A [Uncertain clinical significance because bagged specimens usually only have value in negative findings]
B [Clinically significant bacteriuria because this is a primary urinary tract pbacterium]
C [Clinically significant bacteriuria because the concentration of bacteria is $>10^5$ CFU/ml]
D [Possible contamination when sampling because it is from a bagged specimen]

0000163d13936ec0b2

80
[You requisition a urine culture for a 67-year old woman who visits the doctor's surgery because you believe that she has a lower urinary infection. You commence empirical treatment while you wait for the results of the urine culture.]
[What antimicrobial prescription should you select?]

A [Gentamicin]
B [Cefotaxime]
C [Ciprofloxacin]
D [Nitrofurantoin]

0000163d13936ec0b2

81
What parameters are the best for the clinical evaluation of the severity of illness in a sepsis patient in the accident and emergency department (A&E)?

A Positive blood culture, heart rate, blood pressure
B CRP, urine production, coagulation status
C Temperature, heart rate, respiratory rate, leukocytosis (SIRS criteria)
D Respiratory rate, changes in mental status and blood pressure (quick SOFA)

0000163d13936ec0b2

82
An 80-year-old man is admitted to hospital with blood pressure 85/50, pulse 120 and a temperature (39 degrees celcius). A urine dipstick test shows leukocytes 3+. He has previously had urinary tract stones on several occasions and you therefore carry out an ultrasound scan of his urinary tract. This shows considerable hydronephrosis in his right renal pelvis. You are the on-duty-physician at the hospital.
What is the most correct thing to do for this patient?

A Give the patient intravenous mecillinam and refer him for the insertion of a nephrostomy tube
B Give the patient intravenous ampicillin and gentamicin and refer him for the insertion of a nephrostomy tube
C Give the patient intravenous mecillinam and refer him for an Extracorporeal Shock Wave Lithotripsy (ESWL)
D Give the patient intravenous ampicillin and gentamicin and refer him for Extracorporeal Shock Wave Lithotripsy (ESWL)

0000163d13936ec0b2

83
A woman in the first trimester of her pregnancy visits your doctor's surgery with mild signs of a urinary tract infection. A urine culture shows considerable growth of E. coli. You decide to start treating her with antibiotics.
What treatment regime is most correct?

A Ciprofloxacin (Ciproxin) for 3 days
B Cefuroxime (Zinacef) for 3 days
C Trimethoprim (Trimethoprim) for 5-10 days

D Pivmecillinam (Selexid) for 5-10 days

0000163d13936ec0b2

84
On duty in the Medical Department, you see a young man who has been a backpacker in rural India. He now has a situation with high fever, headache and his general state of health is poor. He has taken malaria prophylactic medication. He has been drinking tap water in several primative places offering accommodation for tourists. He has not noticed any insect bites.
Which investigation and treatment regimens are the most correct for you to commence on the same day?

A Take blood samples for culturing and start treatment with antibiotics for suspected typhoid fever

B Take fecal samples for culturing of pathogenic intestinal bacteria and wait for the results before administering antibiotics because you suspect gastroenteritis

C Take a rapid malaria test and start treatment with i.v. artesuante if positive

D Take bone marrow aspirate samples for culturing and wait for the results before starting antibiotics for suspected rickettsial infection.

0000163d13936ec0b2

85
A young man has been traveling abroad and has had unprotected sex with a prostitute four weeks ago. He wants an HIV test and also wants to know that if he is infected, how long would it take for the test to turn out positive.
What information do you rather give the patient about the HIV test (Combo test)?)

A Positive test results are usually obtained within 3-4 weeks and almost always within 6 weeks
B Positive test results are obtained within 1 week and almost always within 3 weeks
C Positive test results are only obtained after 3 months
D Positive test results are always obtained during the first 2 weeks

0000163d13936ec0b2

86
Patients with lymphoma and chronic inflammatory disease often take rituximab (anti-CD20 antibodies). Which immune system defect in particular do we see in these patients?

A Low plasma levels of immunoglobulins (particularly IgG)
B Reduced number of CD4 lymphocytes
C Decreased complement functionality with low plasma levels of C3 and C4
D Neutropenia

0000163d13936ec0b2

87
Many sepsis patients have reduced renal perfusion and reduced urine output (oliguria). What is the lower limit set for urine output before we refer to it as oliguria?

A 5 ml/kg/h
B 100 ml/h
C 200 ml/h
D 0.5 ml/kg/h

0000163d13936ec0b2

88
[Non-steroidal anti-inflammatory drugs increase the risk of both nephrotoxic and cardiotoxic effects. What characterises the increased risk of such effects that are created by NSAIDs?]

A [The risk of both nephrotoxic and cardiotoxic effects occurs quickly. The increased risk is fully reversible upon discontinuation.]
B [The risk of nephrotoxic effects occurs quickly and is fully reversible upon discontinuation. The risk of cardiotoxic effects only first starts to increase after long-term treatment and is not fully reversible upon discontinuation.]
C [The risk of both nephrotoxic and cardiotoxic effects only first starts to increase after long-term treatment. The increased risks are not fully reversible upon discontinuation.]
D [The risk of cardiotoxic effects occurs quickly and is fully reversible upon discontinuation. The risk of nephrotoxic effects only first starts to increase after long-term treatment and is not fully reversible upon discontinuation.]

0000163d13936ec0b2

89
[Some drugs can damage or inhibit the kidneys when used.
Which group of antibiotics is particularly associated with this?]

A [Macrolides]
B [Aminoglycosides]
C [Carbapenems]
D [Penicillins]

0000163d13936ec0b2

90
[Metoprolol is a beta blocker with a significant first-pass effect.
What consequences does this have when switching from peroral to parenteral treatment?

A [The drug must be administered as a continuous infusion]
B [The dose must be reduced]
C [The dose must be increased]
D [The drug must be administered in a central venous catheter]

0000163d13936ec0b2

91
[A patient with high blood pressure and slightly reduced renal function is treated with an ACE inhibitor. What effects would you expect to see on the patient's serum creatinine levels and glomerular filtration rate (GFR)?]

A [Serum creatinine levels unchanged or slightly elevated, GFR unchanged or slightly elevated]
B [Serum creatinine levels unchanged or slightly reduced, GFR unchanged or slightly reduced]
C [Serum creatinine levels unchanged or slightly reduced, GFR unchanged or slightly elevated]
D [Serum creatinine levels unchanged or slightly elevated, GFR unchanged or slightly reduced]

0000163d13936ec0b2

92
[Angiotensin receptor antagonists are often used for treating hypertension and heart failure. Which of the following comorbidities warrants extra careful follow-up of the patient after starting an angiotensin receptor antagonist?]

A [Chronic kidney disease]
B [Previous syncope upon treatment with glycerol trinitrate (nitroglycerine)]
C [Aortic valve insufficiency]
D [Intermittent claudication]

0000163d13936ec0b2

93
[A 60-year-old man is taking the following medication: atorvastatin (a statin), enalapril (an ACE inhibitor), acetylsalicylic acid (a platelet inhibitor) and omeprazole (a proton pump inhibitor). The patient develops muscle aches.
Which of the patient's drugs typically produces this side effect?]

A [Atorvastatin]
B [Acetylsalicylic acid]
C [Enalapril]
D [Omeprazole]

0000163d13936ec0b2

94
[What is the most important mechanism of action of alendronate (a bisphosphonate drug)?]

A [Increase in the absorption of calcium from the gut]
B [Reduction in the absorption of magnesium and phosphate from the gut]
C [Stimulation of osteoblast activity]
D [Inhibition of osteoclast activity]

0000163d13936ec0b2

95
[Why should pregnant women avoid ibuprofen (Ibux) during the last trimester of pregnancy?]

A [Because of the increased risk of withdrawal symptoms and irritability in the newborn]
B [Because of the increased risk of heart failure and a cleft palate in the fetus]
C [Because of the increased risk of early closure of the ductus arteriosus and reduced kidney function in the fetus]
D [Because of the increased risk of hypotonia and nutritional problems in the newborn]

0000163d13936ec0b2

96
You are the GP for a man in his 60s who 2 weeks ago made an appointment and wanted a "health check". He had noticed that he got tired more quickly and had pain in his legs when out walking, otherwise he felt healthy. He takes no medicines and has no known allergies. He smokes 15 cigarettes a day, as he has done for the last 35 years.
Standard physical clinical examination revealed no pathological findings. Blood pressure was measured at 168/107, and ankle-arm index at 0.7. ECG revealed left ventricular hypertrophy, evaluated using the Sokolow-Lyon criteria. Urine dipstick showed proteinuria 2+. You gave the patient detailed lifestyle advice.
Blood pressure was re-measured 3 days later at 166/108. At today's consultation you measure his blood pressure again and find 172/109. You also have the results of the blood tests you ordered. You decide that the patient's blood pressure should be treated.

Analysis	Value	Reference range
Na	142 mmol/L	137 – 145 mmol/L
K	3.4 mmol/L	3.3 – 4.4 mmol/L
Hb	15.2 g/dl	13.2 – 17.3 g/dl
pro-BNP	5 pmol/L	<15 pmol/L
Fasting p-glucose	6.4	4.2 – 6.3 mmol/L
HbA1c	46 mmol/mol (6.4%)	28 – 40 mmol/mol (4.7 – 5.8%)
Uric acid	510 micromol/L	230 – 480 micromol/L
Triglycerides	2.50 mmol/L	0.45 - 2.60 mmol/L
LDL	6.2 mmol/L	2.0 – 5.3 mmol/L
HDL	0.7 mmol/L	0.8 – 2.1 mmol/L
Total cholesterol	6.9 mmol/L	3.9 – 7.8 mmol/L
eGFR	85 ml/min	>90 ml/min

Which antihypertensive drugs are the most appropriate for this patient?

A Calcium antagonist and thiazide
B ACE inhibitor and beta-blocker
C ACE inhibitor and calcium antagonist
D ACE inhibitor and thiazide

0000163d13936ec0b2

97
[In the American "Women's Health Initiative" study of post-menopausal oestrogen therapy, the women were treated with CEE (conjugated equine oestrogen; the dominant oestrogen drug on the American market at the time) and with medroxyprogesterone acetate. The progestogen component in such "balanced oestrogen therapy" is important to prevent the treatment from increasing the frequency of uterine cancer.
However, balanced therapy increases the risk of another type of cancer. Which one?]

A [Ovarian cancer]
B [Colon cancer]
C [Vaginal cancer]
D [Breast cancer]

0000163d13936ec0b2

98
[You are called to an 85-year old woman who lives at home alone, but receives help from the municipal home care service. She has type 2 diabetes, hypertension and hypercholesterolaemia and is being treated with the following drugs:
Metformin (a biguanide derivative, for diabetes)
Empagliflozin (a sodium/glucose co-transporter 2 inhibitor (SGLT2 inhibitor), for diabetes)
Valsartan (an angiotensin II receptor antagonist, for high blood pressure)
Atorvastatin (a statin, for elevated cholesterol levels)
She has gradually become weaker, is not eating or drinking much and also has diarrhoea. You find the patient to be very dehydrated.
Which of the patient's drugs should be discontinued?]

A [Metformin and valsartan]
B [Empagliflozin and metformin]
C [Empagliflozin and valsartan]
D [Empagliflozin, metformin and valsartan]

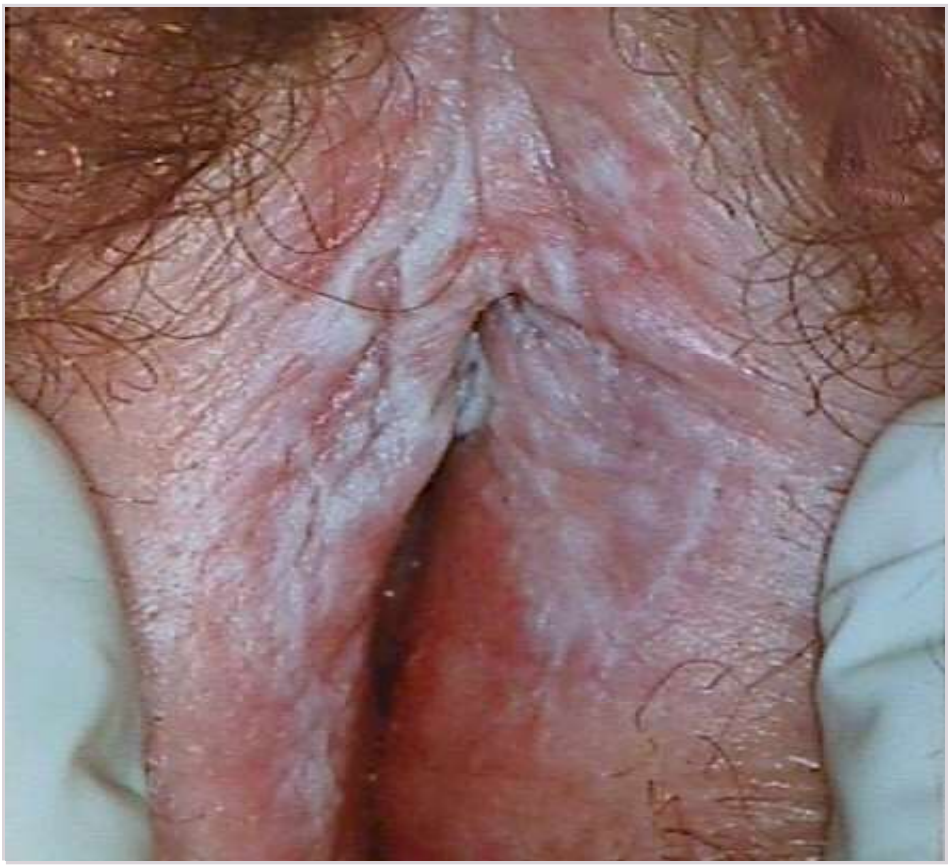
0000163d13936ec0b2

99
[What is the main reason why combining phosphodiesterase 5 inhibitors, e.g. sildenafil (viagra), with organic nitrates, e.g. glycerol trinitrate, is a bad idea?]

A [Glycerol trinitrate inhibits the metabolism of sildenafil and gives elevated levels of sildenafil with the risk of priaprism and a drop in blood pressure]
B [This combination increases the blood pressure lowering effect and increases the risk of a drop in blood pressure]
C [This combination reduces the blood pressure lowering effect and increases the risk of angina pectoris]
D [Sildenafil induces the metabolism og glycerol trinitrates and gives low serum concentrations of glycerol trinitrates with a risk of therapy failure]

0000163d13936ec0b2

100
A 67-year old woman contacts you because she has been suffering from long-term itching and stinging sensations in her vulvar area. Upon examination it looks like the one on the photo below.
What is the most correct action to take next?



A Prescribe local treatment with steroids for lichen sclerosus
B Recommend Klotrimazol (e.g., Canesten) as a topical treatment for candida
C Prescribe Imikvimod (e.g. Aldara) for condyloma
D Refer her to a gynacologist for a biopsy

0000163d13936ec0b2

101
The program CervicalScreen Norway involves screening the cervix in order to prevent cervical cancer. What are the current recommendations from the Cancer Registry of Norway?

A Cervical cytology every third year for the age group 25 to 69 years
B Cervical cytology every third year for the age group 25 to 69 years, and additional HPV test if abnormal cytology
C Cervical cytology every third year for the age group 25 to 33 years, and primary HPV test every fifth year for the age group 34 to 69 years
D Primary HPV test every fifth year for the age group 25 to 69 years

0000163d13936ec0b2

102
A 35-year old woman who has a family history of breast and ovarian cancer comes to your GP surgery.
- her mother had breast cancer at 48 years of age
- her maternal grandmother had ovarian cancer at 55 years of age
- a cousin (daughter of her mother's sister) had breast cancer at 37 years of age
What advice do you give the woman?

A Annual check by the GP with cervical cytology.
B Prophylactic surgery (salpingo-oophorectomy + mastectomy) as soon as possible.
C Refer the woman for genetic counselling and gene testing.
D Annual mammography and gynaecological examination by a gynaecologist.

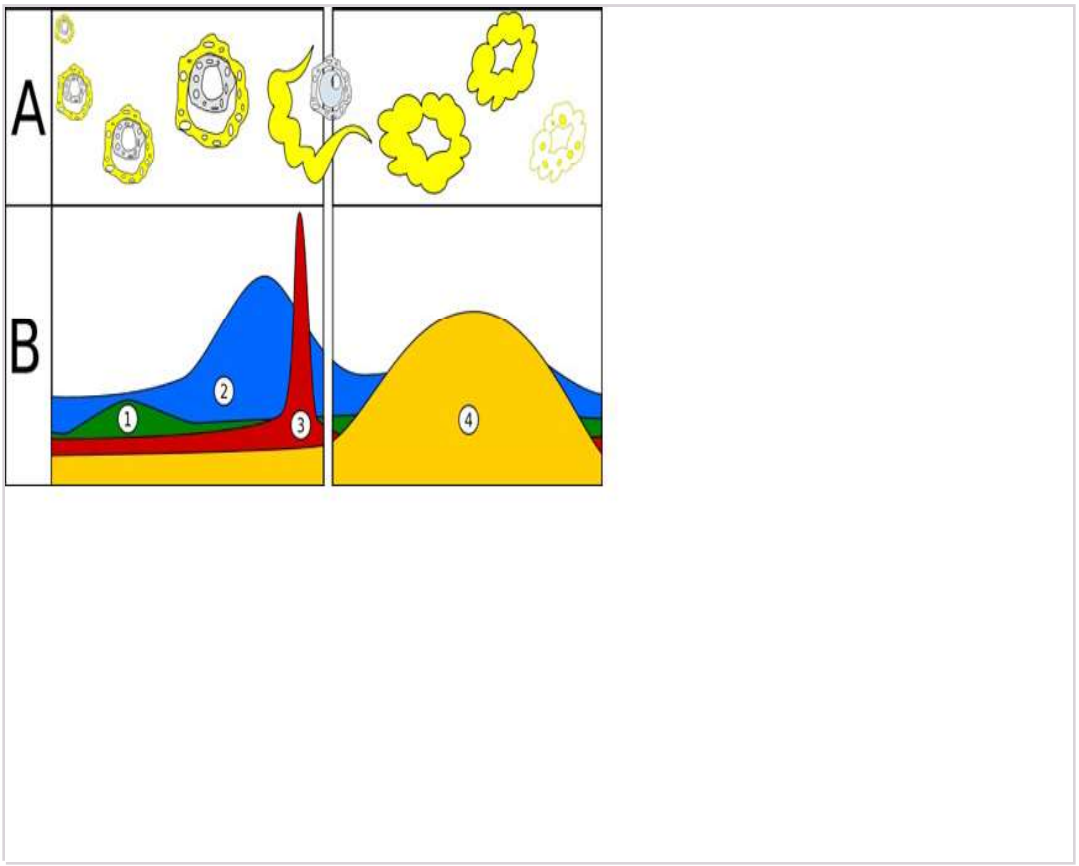
0000163d13936ec0b2

103
What is the most correct approach towards unpleasant-smelling discharge in general practice?

A If the patient complains of unpleasant-smelling discharge, a vaginal culture test should be ordered with queries about sexually transmitted infection and treatment should be delayed until the results have been received
B If the patient complains of unpleasaant-smelling discharge, and low-pH vaginal secretions are measured, and the whiff test is positive, she should be given a prescription for metronidazole or clindamycin
C If the patient complains of unpleasant-smelling discharge, which cannot be confirmed using a whiff test, the patient should be told that everything appears to be normal during today's examination
D If the patient complains of a fishy-smelling discharge that is worse after menstruation or intercourse, a prescription should be written for metronidazole or clindamycin

0000163d13936ec0b2

104



The picture above shows the menstrual cycle in women.
Which hormone represents the curve that is 1 (green), 2 (blue), 3 (red) and 4 (yellow) ?

A 1 (green) is FSH, 2 (blue) is oestradiol, 3 (red) is hCG (human chorionic gonadotropin) and 4 (yellow) is progesterone.
B 1 (green) is FSH, 2 (blue) is oestradiol, 3 (red) is LH and 4 (yellow) is progesterone.
C 1 (green) is AMH, 2 (blue) is oestradiol, 3 (red) is LH and 4 (yellow) is progesterone.
D 1 (green) is FSH, 2 (blue) is progesterone, 3 (red) is LH and 4 (yellow) is oestradiol.

0000163d13936ec0b2

105
A 22-year-old woman visits you at the General Practitioner´s (GP´s) office on an island which is a 3-hour drive from the hospital. She claims to have amenorrhoea for 8 weeks and a vaginal bleeding for two days. She is not suffering from any particular pain. You take a urine HCG test and the result is positive.
What should you rather do as a GP?

A You start infusion of 1 litre of intravenous Ringer's solution, after having taken her blood pressure and pulse and called in the air ambulance in order to send the patient directly to hospital because you cannot exclude an ectopic pregnancy.
B You perform an inspection of the vagina and cervix. If you do not find any signs of pathology, you ask the patient to contact you again in a few days' time if she is still bleeding, or if she starts to feel any pain.
C You send a referral to the Gynecology Department for a vaginal ultrasound scan in order to determine the location and vitality of the pregnancy. The gynecologist will then perform an inspection of the cervix.

0000163d13936ec0b2

106
A 29-year-old woman delivered her 3rd child a few days ago. After lifting her 3-year-old son, she suddenly felt a big lump coming out of her vagina, and she immediately contacted her doctor. The doctor examines her and finds a large uterine prolapse, and replaces the prolapsed uterus.
What is the main further treatment option?

A Surgical correction of the prolapse as an emergency procedure.
B Intensified pelvic floor muscle exercise after instruction from a physioterapist.
C Treatment with a vaginal ring pessary and local oestrogens.
D Bed rest for a minimum of 4 weeks and Klexane (Enoksaparin) to prevent thrombosis.

0000163d13936ec0b2

107
A 25-year-old woman comes to see you as her general practitioner due to very frequent urination, urgency. U-stix is negative.
What is the most appropriate first-line treatment?

A Bladder training
B Electrostimulation
C Tension-free vaginal tape (TVT) surgery
D Anticholinergic agent

0000163d13936ec0b2

108
What is the most common histological type of endometrial cancer?

A Clear-cell
B Serous
C Endometrioid
D Mucinous

0000163d13936ec0b2

109
You are working as a GP. A 22-year-old woman visits you. She is troubled by bleeding which lasts for 4-7 days at 14-35 day intervals. She is active, her BMI is 23, she uses ventolin for asthma when required and suffers from migraines with an aura. She lives with her partner and they want to have children in 2-3 years' time. She has been taking the mini pill up until now. What is the most appropriate recommendation for her?

A Contraceptive implant
B Hormone coil
C Combined oral contraceptives
D Contraceptive injection (Medroxyprogesterone / Depo-Provera)

0000163d13936ec0b2

110
Amenorrhoea which occurs naturally in connection with the menopause can be best classified as

A Hypogonadotropic hypergonadism
B Hypergonadotropic hypergonadism
C Hypergonadotropic hypogonadism
D Hypogonadotropic hypogonadism

0000163d13936ec0b2

111
Which result on urine dipstick is most likely a normal finding during routine pregnancy check-ups?

A Blood
B Protein
C Leukocytes
D Glucose

0000163d13936ec0b2

112
Twins can either be monozygotic or dizygotic. Which statement regarding zygosity and the number of placentas is the correct?

A All monozygotic twins have their own placenta
B All dizygotic twins have a common placenta
C All dizygotic twins have their own placenta
D All monozygotic twins have a common placenta

0000163d13936ec0b2

113
Correct dating in pregnancy is important for determining the correct due date. Which measurement of the fetus is used during the second trimester for dating a pregnancy?

A Crown rump length (CRL)
B Humerus length (HL)
C Biparietal diameter (BPD)
D Mean abdominal diameter (MAD)

0000163d13936ec0b2

114
Which statement regarding caesarian section is the most correct?

A Foetal distress and prolonged labour are the most common causes of caesareans in Norway.
B Cesarean section on maternal request is the most common cause of caesareans in Norway.
C Due to the low number of deliveries per women in Norway, a caesarean is both more cost effective and involve less risk to the mother and child compared to a vaginal birth.
D Repeat caesarean section are the most common cause of caesareans in Norway.

0000163d13936ec0b2

115
A 26-year-old woman who is pregnant for the first time has come to the hospital during week 39+5 of her pregnancy with contractions every 3rd to 5th minutes. Her BP is 120/70, pulse 80 and the fetus's heart beat is 145. There is a head presentation and and there is no rupture of the membranes. Upon admittance her cervix was 4 cm dilated and after 2 hours at the hospital her cervix is 7 cm dilated. What is the next step?

A Start her on oxytocin in order to increase the strength and frequency of her contractions.
B Perform an amniotomy in order to increase the strength and frequency of her contractions.
C Continue with active observation of a normal birth.
D Perform an amniotomy in order to be able to monitor the fetus by using STAN (ST-ANalysis of the CTG).

0000163d13936ec0b2

116
What is the pCO2 in the arterial blood of a pregnant woman when compared to that of a non-pregnant woman?

A The same
B Much higher
C Lower
D Higher

0000163d13936ec0b2

117
What are the recommended postpartum follow-up measures for a woman who has had gestational diabetes?

A No follow-up measures are required unless she becomes pregnant again and then a glucose tolerance test should be carried out during the first trimester
B During her next pregnancy she would nevertheless develop gestational diabetes so that treatment for this should be started as soon as she becomes pregnant
C No follow-up measures are necessary
D The woman should measure her HbA1c levels approx. 4 months postpartum and then approx. once a year

0000163d13936ec0b2

118
A 35-year old woman who is pregnant for the first time visits you for a pregnancy check-up. Her weight is normal and she is fit and healthy. The length of her pregnancy is 26 weeks and 3 days. She is experiencing daily movement from the fetus. She feels that her general state of health is good and she has no pain.
When you examine her you discover that the fetal heart beat is 140-150. You find that the symphysis-fundus measurement is consistent with the length of her pregnancy. A urine dipstick test is negative. You measure her blood pressure at 160/100. When you look at her antenatal health card you find that when the midwife measured her blood pressure one week ago it was 155/95. What is the most correct thing to do?

A Refer the patient for emergency assitance at the hospital
B Start treatment with a low-dose of an ACE inhibitor and refer the patient to the pregnancy outpatient clinic.
C Ask the patient to contact you again if she experiences any headaches
D Undertake a 24-hour BP monitoring and assess it the following day

0000163d13936ec0b2

119
It is usual for pregnant mothers to have a check-up around week 24 of their pregnancy. What tests should be considered at this gestation age?

A No tests, this check-up is all about information
B Height, weight and glucose tolerance test
C SF measurement, BP, weight and urine sample, listening to the fetal heart beat, and possibly glucose tolerance test
D BP, urine sample

0000163d13936ec0b2

120
A healthy woman, Para 3, all normal pregnancies; 2 normal vaginal deliveries and 1 Caesarian section. She is now pregnant again. Routine ultrasound in week 18 revealed placenta on the anterior wall and placenta previa which was later confirmed by ultrasound follow up in week 32.
Which risk should you be most aware of with this woman?

A Hypertension
B Intrauterine growth restriction of the fetus
C Vasa previa
D Placenta accreta

0000163d13936ec0b2