Medical Technology

MLA

Medical Lab Assistant Certification Exam

Latest Version: 6.0

Question: 1

A battlement scan is preferable to a wedge scan for studying bone marrow because:

A. Battlement technique distributes cells evenly across the slide
B. Lymphocytes concentrate in the feather
C. Wedge technique causes leukocytes to pool in different sections of the slide
D. Both A and C

Answer: D

Explanation:
Make a bone marrow slide with a battlement technique so the review is more standardized, with even cell distribution. Wedge push technique (feathered end) causes the white cells to pool unevenly on the slide. On the side edges and in the feather of a wedge push slide, you will find concentrated pockets of eosinophils. monocytes, and segmented neutrophils. Small lymphocytes concentrate in the center of the slide.

Question: 2

Most coagulation (clotting) disorders are due to:

A. Phase I problems
B. Factor VIII deficiency
C. Fibrinolysis
D. Factor III distress call from the injury site

Answer: A

Explanation:
Phase I of coagulation happens in the first 3 to 5 minutes after an injury, when the platelets mobilize. Factor III distress call is sent in phase II, not phase I. Factor VIII deficiency is the problem that causes hemophilia. Fibrinolysis occurs when the injured site is plugged with a blood clot and plasminogen changes to plasmin.

Question: 3

If the patient's PT and PTT are longer than 70 seconds, then check if ____ caused a false result:

A. Ferritin
B. Lupus inhibitor antibody (LA)
C. Platelet antibody

D. Intrinsic factor

Answer: B

Explanation:
Lupus inhibitor antibody (LA). Hematologists use phospholipid in PT and PTT tests to check how fast a patient clots. The normal range for PTT is 60 to 70 seconds. Lupus inhibitor antibody (LA) acts against the phospholipid and falsely extends clotting time. LA is implicated in miscarriages. rheumatoid arthritis, lupus, Reynaud syndrome, and thromboembolism. Platelet antibody testing is only appropriate if the patient has purpura and hemoglobinuria. Intrinsic factor is incorrect: it is the stomach's ability to produce B12 to prevent pernicious anemia.

Question: 4

Confirm a fungal infection found through microscopy with a:

A. Latex serology for cryptococcal antigen
B. Fungal serology titer of more than 1:32 that increases or more 3 weeks later
C. Complement fixation for coccidiomycosis and histoplasmosis
D. Immunodiffusion for blastomycosis.

Answer: B

Explanation:
Fungal serology titer of more than 1 that increases x4 or more 3 weeks later. First, gently scrape suspected fungus off the patient's skin. Mix two drops of 10% potassium hydroxide (KOH) and one drop of LPCB on a glass slide. cover it, and warm it to observe budding yeasts. Add a drop of calcofluor white before warming to see fluorescent infected tissue. Put a drop of India ink on a wet mount to see clear cryptococcal capsules. Confirm the microscopic exam with fungal serology when you test the skin scraping and again in three weeks. The doctor may follow up by ordering latex serology for cryptococcal antigen to find meningitis, complement fixation for coccidiomycosis and histoplasmosis, and immunodiffusion for blastomycosis.

Question: 5

Two modern flocculation tests that replace the older Venereal Disease Research Laboratory (VDRL) test for syphilis screening are:

A. Plasmacrit test (PCT) and rapid plasma reagin (RPR) test
B. Fluorescent treponemal antibody absorption (FTA-ABS) and enzyme-linked immunosorbent assay (ELISA)
C. Treponemal-specific microhemagglutination (MHA-TP) and T. pallidum particle agglutination test (TP-PA)
D. Captia Syphilis-G enzyme immunoassay (EIA) and cold agglutinins

Answer: A

Explanation:
Plasmacrit test (PCT) and rapid plasma reagin (RPR) test. The old screening test for syphilis is VDRL, which measures Treponema pallidum antibodies by flocculation reaction to the diphosphatidyl glycerol in ox heart extract. However, VORL misses cases of syphilis that are less than four weeks old, and half of cases that are in the late stages. VDRL is not very sensitive, and often gives a false-positive result for patients with the following conditions: pregnancy. hepatitis, HIV, leprosy, lupus (SLE), Lyme disease, malaria, mononucleosis, pneumonia, rheumatic fever, or rheumatoid arthritis. PCT and RCR are less likely to be confounded, and since they require less blood, are replacing VDRL. ELISA confirms syphilis infection by identifying the specific antibodies. FTA-ABS is 100% accurate for secondary syphilis, but it is expensive, and the patient will always test positive once infected. Captia is required to confirm RPR Cold agglutinins increase in children with congenital syphilis.

Question: 6

To make a dilution of % or 1:2

A. Dilute % ml of serum with 2 mL of saline
B. Dilute 1 ml of serum with 2 mL of saline
C. Test undiluted serum for antibody/antigen reaction against a control
D. Dilute 1 mL of serum with 1 mL of saline

Answer: D

Explanation:
Dilute 1 mL of serum with 1 mL of saline. You must know how to dilute to perform a titer, which measures how many times a blood sample must be diluted with saline before an antibody can no longer be found in it. First. check the antibody/antigen reaction against the controls with undiluted serum. To prevent blood clotting (Rouleaux formation) during dilution. warm the blood and saline to body temperature (3 7 °C) for 10 minutes before diluting. Dilute 1 mL of serum with 1 mL of saline for a dilution of ½ or 1:2. Pipette off 1 mL of this dilution into an aliquot tube. Add 1 mL of saline, and it becomes a dilution. If you dilute up to 1:32 and get no reaction, the end-point titer is 16.

Question: 7

A Monospot test uses ingredients from:

A. Guinea pig, cow, and horse
B. Sheep, pig, and horse
C. Dog. sheep, and rabbit
D. Fish, cat, and ferret

Answer: A

Explanation:
Guinea pig, cow, and horse. Monospot heterophile antibodies test confirms an early infection of mononucleosis, caused by Epstein-Barr virus. If the infection is older than g weeks, then the doctor

orders EBV antibody test. On a glass slide, mix a drop of the patient's blood with guinea pig kidney antigen to absorb Forssman antibodies. Add beef red blood stroma to absorb non-Forssman antibodies. Mix with horse blood. Guinea pig agglutination means the patient has early mononucleosis. Beef should not agglutinate. Monospot can be false-negative on children younger than 10, or before two weeks of infection. B, C, and D are not applicable to Monospot.

Question: 8

A prozone phenomenon occurs when performing an antibody titer on a patient with:

A. Epstein-Barr virus (EBV)
B. Reynaud disease
C. Both syphilis and HIV
D. Immunoglobulin G (IgG) antibodies

Answer: C

Explanation:
Patients coinfected with HIV and syphilis are immunosuppressed. When performing a titer to find antibodies in an HIV [syphilitic. beware prozone phenomenon. The coinfected patients undiluted serum may produce a false-negative result because it does not agglutinate. Alternatively, it may show very little agglutination at low dilutions, but agglutinates more at higher dilutions because of excess antibodies. Monospot is used to find EBV mononucleosis. Reynaud disease is characterized by rouleaux formation and high cold agglutinin titers. IgG occurs in patients who are convalescing from mononucleosis.

Question: 9

An Rh- mother who is pregnant with the child of an Rh+ father needs Rh immunoglobulin (RhoGAM):

A. Even if the pregnancy ends in miscarriage or abortion
B. At 26 to 28 weeks of pregnancy and again within 72 hours after her delivery.
C. During her labor
D. Both a and b

Answer: D

Explanation:
RhoGAM is the brand name for Rh immunoglobulin. It is administered to Rh- women who acquired anti-D antibodies from a previous blood transfusion or pregnancy. The infant and father do not receive RhoGAM at all. If there is a live birth, the mother gets 300 mcg of RhoGAM during week 26 to 28 of her pregnancy. and again before her infant is 3 days old. Ifthe pregnancy miscarries before week 13 or is aborted, then the mother gets A lower dose of 50 mcg of MICRhoGAM. If the miscarriage or abortion happens after week 13, use RhoGAM.

Question: 10

If your patient has a mild transfusion reaction:

A. Eosinophilia, hypocalcemia, leukopenia, and pancytopenia may occur
B. Dyscrasia, leukocytosis. hypercalcemia, and leukemia may occur
C. Anemia. hypokalemia, glycosuria, and pancytopenia may occur
D. Hemolysis, hyperkalemia, hypoglycemia, and hemoglobinuria may occur

Answer: A

Explanation:
Eosinophilia, hypocalcemia, leukopenia, and pancytopenia may occur. The first lab sign of a mild transfusion reaction is the oxyhemoglobin dissociation curve shifts left. Later, the number of eosinophils will increase and the calcium level will drop. Finally, white blood cells will decrease, and then all blood cells will decrease. Minimize the chance of transfusion reaction by washing the donor's red blood cells in sterile normal saline before transfusion. If the doctor anticipates a mild transfusion reaction, he/she may give antihistamines to the patient before transfusion, and may order the removal of white cells from the bag of blood by a Sepacell R-500 leukocyte reduction filter. Irradiated blood products prevent fatal transfusion-associated graft-versus-host disease (TA-GVHD). The safest way for a patient to prepare for elective surgery is to bank his own blood for transfusion (autologous donation).

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