**Question 1**

Which is the correct sequence of first to last laboratory abnormality seen with disseminated intravascular coagulation (DIC)?

A Elevated PT, hypofibrinogenemia, thrombocytopenia

B Elevated prothrombin time (PT), thrombocytopenia, hypofibrinogenemia

C Hypofibrinogenemia, elevated PT, thrombocytopenia

D Thrombocytopenia, elevated PT, hypofibrinogenemia

E Thrombocytopenia, hypofibrinogenemia, elevated PT

Explanation D

In DIC, fibrinogen levels are decreased as they are converted into fibrin. Thrombocytopaenia occurs. D-dimer levels are elevated. APTT and PT levels are increased. Decreased factors V and VIII. Treatment of the underlying cause is the most important management of patients with DIC. Additional management includes protein C therapy and factor VIIa therapy There are multiple causes of DIC including hepatic failure, obstetric causes (amniotic fluid embolism, eclampsia, foetal death in utero), trauma, malignancy, immunological, sepsis (gram neg and viral haemorrhagic fever).

Extra: The laboratory abnormalities reported in DIC listed in the decreasing order of frequency are thrombocytopenia, elevated fibrin degradation products (FDPs), prolonged PT, aPTT and a low fibrinogen. In early DIC, the platelet count and fibrinogen levels may remain within the normal range, albeit reduced from baseline levels.

Source: DIC-www.ncbi.nlm.nih.gov/pmc/articles/PMC4260307/

**Question 2**

Regarding disseminated intravascular coagulation which of the following is INCORRECT?

A The only definitive treatment is removal of the underlying cause

B Decreased fibrinogen levels

C Gram-negative sepsis is a cause of DIC

D Platelets levels usually remain unchanged

E Activated partial thromboplastin time (APTT) is increased

Explanation D

In DIC, fibrinogen levels are decreased as they are converted into fibrin. APTT is markedly increased. Thrombocytopaenia occurs. Treatment of the underlying cause is the most important management of patients with DIC. Additional management includes protein C therapy and factor VIIa therapy There are multiple causes of DIC including hepatic failure, obstetric causes (amniotic fluid embolism, eclampsia, foetal death in utero), trauma, malignancy, immunological, sepsis (gram neg and viral haemorrhagic fever). DIC is never a primary disease

**Question 3**

In relation to myelofibrosis, which of the following statements is false?

A Casues an increase in megakaryocytes

B Supresses extramedullary hematopoiesis

C Stimulates erythropoetin production

D Causes leukoerythroblastic anaemia

Explanation B

Myelofibrotic obliteration of the marrow space leads to extensive extramedullary haematopoeisis, principally in the spleen. There is a tri-linear haematopoietic proliferation, often with a predominance of megakaryocytes. Laboratory findings include a severe normochromic normocytic anaemia accompanied by leukoerythroblastosis. The serum erythropoietin level in idiopathic myelofibrosis appears to be appropriately elevated to the degree of anaemia in most patients, but this observation may be misleading because the observed increase in circulating erythropoietin is not sufficient to correct the anaemia- a situation common to anaemia of chronic disease. Thus with symptomatic anaemia and with serum erythropoietin levels less than 200mU/ml, a trial of recombinant human erythropoietin is appropriate

**Question 4**

With regard to thrombocytopenia, which of the following statements is false?

A Causes spontaneous bleeding at levels of less than 20,000/mm

B Occurs with hyposplenism

C Is associated with megaloblastic anaemia

D Occurs commonly in HIV

Explanation B

Thrombocytopaenia causes spontaneous bleeding at levels < 20000/mm. 20000-50000/mm is associated with post traumatic bleeding. Thrombocytopenia is associated with megaloblastic anaemia and occurs in HIV cases, it is the most common haematological manifestation. Hypersplenism causes a thrombocytopaenia through platelet sequestration.

**Question 5**

Macrocytic anaemia is associated with all the following except?

A Pregnancy

B Hypothyroidism

C Epstein–Barr virus (EBV)

D Neoplasm

Explanation C

One of the most common causes of macrocytic anaemias are the megaloblastic anaemia, in which cells are larger because they cannot produce DNA quickly enough to divide at the right time as they grow, thus growing too large before division. Megaloblastic anaemia is caused by a vitamin B12 deficiency, folic acid deficiency, or due to unresponsiveness to vitamin B12, or folic acid therapy. Pregnancy and disseminated cancer all have an increased requirement for B12.

Hypothyroidism- Macrocytosis is found in up to 55% patients with hypothyroidism and may result from the insufficiency of the thyroid hormones themselves without nutritive deficit.