AML IN Pregnancy

Urea mmol/L

01Y  1 6   0 20  

 998Y  2.8 8.1

Creatinij umol/L

07D  0 100   0 100  

 04W  10 70   0 100  

 04Y  15 40   0 100  

 99Y  60 105   0 400

ALT U/L

01Y  0 45    

 99Y  0 41   0 100

AST U/L

04W  0 75    

 01Y  0 65    

 99Y  0 32

LDH U/L

30D  365 1450    

 05W  365 1450    

 06M  310 790    

 01Y  325 670    

 99Y  240 480    

 998Y  240 480

BILI

Normal Range: 0.1-1.2 Direct (conjugated to glucuronide) bilirubin, 0.1-0.4 mg/dL (< 7 µmol/L); Indirect (unconjugated) bilirubin, 0.2-0.7 mg/dL (< 12 µmol/L) mg/dL

**Case Number: 2**

**Case Summary:**

20week G1P0 with hepatospleenomegaly.

**History**

A 22yo G1P0 female presented to ER with amenorrhea, pyrexia, anaemia, and a rash over her limbs.

Examination revealed pallor, peteciae, hepto-spleenomegaly, and a enlarged uterus corresponding to appox 20weeks of gestation (confirmed via ultra sound).

Patient had a miscarriage at 12 weeks one year previously.

No significant family or personal history noted.

**Microscopy:**

**Core Data**

WCC 2.4 - L

HB 46 - L

MCV 85 - N

MCH 27 - N

MCHC 350 - N

PLT 6 - L

Other:

Urea 16 - H

Creatinine 42 umol/L – N

AST 140 U/dl - H

ALP 676 U/dl - H

LDH 1083 mg/dl – H

TBIL Bil 1.31mg/dl - H

Question 2:

Further tests:

Option 1 ASXL1 and TET2 mutations

Option 2 B12 and Folate

Option 3 BM Biopsy + Flow

Option 4 JAK2 & BCR/ABL fusion 1 gene

Answer 2: 3

Dialog 1

Negative.

These RNA splicing mutations are generally used in investigation of myelodysplastic syndromes

Dialog 2

Folate 8.56 – Low, B12 Normal

Dialog 3 .

BM examination revealed 75% non-erythoid blasts with high/nuclear cytoplasmic ratio, which demonstrated positivity with Sudan Black and Myeloperoxidase and were negative for periodic acid-Schiff.\n

\nBlasts were of Type 1 (agruanlar) and Type II (granular).

\nApproximately 10% of remaining non-erythoid cells were maturing granulocytes.

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Flow cytometry analysis with a Beckman Coulter Cytomics F500 showed the blasts population was positive for CD13, CD33, CD34 and CD11/CD14/36/64/68 negative.

\n\n

Cytogenetic’s revealed a normal XX type.

Dialog 4

Negative.

JAK2 and BCR/ABL fusion genes are used investigating of Myeloproliferative disorders ie CML, ET, PRV.

**Question 3: What is diagnosis**

Option1 : Pure Erythroid Leukemia

Option 2: AML –M5 Monblastic

Option 3: AML – M2

Option 4: Acute Basophilic Luekemia

Answer 3: 3

**Summary**

AML M6 and M5 (erythoid and Monocytic) are PAS (periodic acid-Schiff) negative. \n\n

Monocytic AML will demonstrate CD11/CD14/36/64/68 positivity.\n\n

Pure erythoid luekmia (AML M6 FAB) will demonstrate a HLD-DR+/-, CD34-, CD71+ flow profile.\n\n

Acute Basophilic Luekaemia (WHO classification) – very rare and occurs as an end stage leukaemia in less than 1% of all cases of CML.

\n\n

This patient had AML M2 ( FAB classification), the WHO equivalent Acute myeloblastic leukaemia with maturation.\n\n

The Patient received induction chemotherapy (3 + 7 regimen) with Daunorubicin 60 mg/m2 /day x 3 days and cytosine arabinoside 200mg/m2 /D x 7 days as continuous infusion.

\n Post induction 2 weeks a marrow was performed which was found to be very hypocellular. A repeat in 2 weeks show complete remission and a normal cellular marrow.

She delivered a healthy female newborn with no signs of disease or congenital defects.

Post delivery she then received 3 courses of consolidation chemotherapy using high dose cyosine arabinoside.

\n\n

Leukemia in pregnancy occurs in approx 1 i 10000 pregnancies.\n

The decision to introduce or postpone chemotherapy must be balanced against the impact on maternal and fetal survival and morbidity.\n

AL diagnosed in first trimester invariably necessitates chemotherapy and is likely to result in foetal malformations. Conversely, AL diagnosed in the second trimester does not necessarily require termination and treatment is similar to those of nongravid patients.

The outcome of gravid women diagnosed with AL appears to be worse than that of their age-matched non gravid counterparts. However, the survival rate of fetuses exposed to chemotherapy is encouraging and the incidence of malformations and low birth weights for gestation is low.

(Israel Henig, 2013)

?Question 4:

What is pathogenesis of this condition?

Option A Somatic Mutation – Of a single cell within a minor population of stem or early progenitor cells in the bone marrow or thymus.

Option B

Option C

# Bibliography

Israel Henig, M. (2013). Acute Myeloid Leukemia Diagnosed During Pregnancy: Facing Challenges. Systematic Review and Analysis Of 174 Reported Cases. *Blood* , 121.

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