April-2001

[KD 067] **Sub. Code : 1404**

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch X — Haematology

Paper IV — RECENT ADVANCES IN HAEMATOLOGY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Discuss pathophysiology of sickle cell anaemia and its impact on future therapies. (20)

2. Discuss possible strategies that may be useful in expanding donor pool for allogeneic stem cell transplantation. (20)

3. Discuss adoptive immuno–therapy. (20)

4. Write short notes on : (4 × 10 = 40)

   (a) Hirudin

   (b) Rituximab (Rituxan)

   (c) New variant Creutzfeldt–Jakob disease

   (d) The stanford V Regimen for Hodgkin's disease.

March-2002

[KG 067] **Sub. Code : 1404**

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch X — Haematology

Paper IV — RECENT ADVANCES IN HAEMATOLOGY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Discuss advances and controversies in the management of thalassaemia major. (20)

2. Discuss future of autologous stem cell transplantation in haemotological disorders. (20)

3. Discuss angiogenesis, anti–angiogeneic factors and their clinical applications in haemtology. (20)

4. Write short notes on : (4 × 10 = 40)

   (a) Abciximab (RheoPro)

   (b) Radio–immunotherapy

   (c) TT virus

   (d) PEG Interferon.

September-2002

[KH 067] **Sub. Code : 1404**

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch X — Haematology

Paper IV — RECENT ADVANCES IN HAEMATOLOGY

Time : Three hours **Maximum : 100 marks**

Answer ALL questions.

1 Recent advances in iron metabolism (20)

2. Role of immunohistochemistry in the diagnosis of "Lymphocyte predominance Hodgkin's disease – LPHD" and "Classical Hodgkin's disease – CHD". (20)

3. Tyrosine kinase inhibitors in management of haematological malignancies. (20)

4 Write short notes on : (4 × 10 = 40)

(a) Mutations of p53 gene.

(b) Thrombopoietin.

(c) Unrelated bone marrow transplantation

(d) Angiogenesis inhibitors.

April-2004

[KK 067] **Sub. Code : 1154**

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch X — Haematology

Paper IV — RECENT ADVANCES IN HAEMATOLOGY

Time : Three hours — Maximum : 100 marks

Theory : Two hours and forty minutes — Theory : 80 marks

M.C.Q. : Twenty minutes — M.C.Q. : 20 marks

Answer ALL questions.

A. Essay Questions : (2 × 15 = 30)

(1) What are monoclonal antibodies and how are they produced? Describe how these have been modified to produce the agents we use for therapy today and their place in hematology practice today.

(2) Discuss the possible approaches to gene therapy and its status for the future management of blood disorder.

B. Short Notes : (10 × 5 = 50)

(1) Extracorporeal photopheresis.

(2) Preimplantation diagnosis.

(3) IL2 receptor antibodies.

(4) NAT testing.

(5) Farnesyl transferase inhibitors.

(6) B domain deleted factor VIII.

(7) Caspofungin.

(8) Defibrotide.

(9) 2deoxycoformycin.

(10) Antenatal diagnosis from maternal blood.

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[KM 067] **Sub. Code : 1404**

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch X — Haematology

Paper IV — RECENT ADVANCES IN HAEMATOLOGY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Essay Questions : (2 × 15 = 30)

(1) Discuss the role of targeted therapy in haematology.

(2) Discuss the recent criteria for diagnosis of antiphospholipid syndrome.

II. Short notes : (10 × 5 = 50)

(a) Role of WT 1 gene in haematological malignancies.

(b) Fondaparinux.

(c) Newer diagnostic tests for Hereditary Spherocytosis.

(d) Haemopoetic stem cell plasticity.

(e) "Off–licence" use of recombinant F VII a.

(f) Cell adhesion–mediated drug resistance.

(g) PRV–1 gene.

(h) Application of Microarray in designing diagnostic tests.

(i) Assays for ADAMTS 13 activity.

(j) Annexin V and thrombosis.

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[KO 067] **Sub. Code : 1404**

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch X — Haematology

Paper IV — RECENT ADVANCES IN HAEMATOLOGY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Essay questions : (2 × 15 = 30)

(1) Newer concepts in the pathogenesis and management of PNH.

(2) Discuss Immunotherapy of Lymphoma.

II. Short note : (10 × 5 = 50)

(a) Current management of Thalassemea

(b) Thrombocytopenia in HIV infection

(c) Viral gene transfer

(d) Thrombo elastography (TEG)

(e) Immunomodulatory effect of Thalidomide

(f) Large granular cell leukemia

(g) Apoptotic pathways

(h) Direct thrombin inhibitors

(i) Lead poisoning

(j) Acute hybrid leukemia.

[KP 067] **Sub. Code : 1404**

D.M. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch X — Clinical Haematology

Paper IV — RECENT ADVANCES IN HAEMATOLOGY

Time : Three hours	Maximum : 100 marks
Theory : Two hours and forty minutes	Theory : 80 marks
M.C.Q. : Twenty minutes	M.C.Q. : 20 marks

Answer ALL questions.

I. Essay questions :

(1) Describe the recent advances in the treatment of hyper eosinophilic syndrome. (20)

(2) Discuss prenatal diagnosis in haemoglobinopathics – Indian perspective. (15)

(3) How micro array will help in the management of haematological disorders. (15)

II. Short notes : (6 × 5 = 30)

(a) Immune reconstruction after standard allogenic haematopoietic stem cell transplantation.

(b) Post transplantation lymphoproliferative disorder.

(c) (ADMTS–13) and TTP.

(d) Activation of HbF production in the management of haemoglobinopathics.

(e) Chronic GVHD – Current Management.

(f) Recent advances in understanding of Rh blood group antigen.

August 2008

[KT 067] **Sub. Code: 1404**

D.M. DEGREE EXAMINATION

(Higher Specialities)

Branch X – Clinical Haematology

(Revised Regulations)

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: Three hours **Maximum: 100 Marks**

Answer ALL questions

Draw suitable diagrams wherever necessary.

I. Essays: **2 x 20 = 40**

1. Monoclonal autibodies for treatment of haematological disorders.
2. Challenges and promises of gene theropy in severe haemophilic.

II. Write short notes on: **10 x 6 = 60**

1. Prenatal diagnosis in haemophilia.
2. Enzyme replacement therapy in haematological disorders.
3. Application of extra corpuscular photopheresis.
4. Nuclic acid amplification test for blood safety.
5. Comparative Genomic hybridization.
6. Management of post transplant lympho proliferative disorders.
7. Recent advances in antifungal therapy.
8. Understanding the molecular mechanisam of haemophygocytic syndromes.
9. Eltrombopag and its application.
10. Management of imatinib resitance in CML in chronic phase.

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August 2009

[KV 067] **Sub. Code: 1404**

D.M. DEGREE EXAMINATION

(Super Specialities)

Branch X – Clinical Haematology

(Revised Regulations)

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: Three hours **Maximum: 100 Marks**

Answer ALL questions

Draw suitable diagrams wherever necessary.

I. Essays: **2 x 20 = 40**

1. AIDS related lymphomas.
2. Management of a female patient with 4 first trimester fetal losses.

II. Write short notes on: **10 x 6 = 60**

1. Post exposure prophylaxis of HIV.
2. Platelet refractoriness.
3. Helicobacter pylori and ITP.
4. Role of Cytogenetics in MDS.
5. Granulocyte transfusions.
6. Management of Hemophilia A with inhibitors.
7. Infections in a BMT unit – preventive measures.
8. Arsenic trioxide.
9. Osteonecrosis of the jaw.
10. Eculuzimab.

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August 2011

[KZ 067] **Sub. Code: 1404**

DOCTORATE OF MEDICINE (D.M.) DEGREE EXAMINATION (SUPER SPECIALITIES)

BRANCH X – CLINICAL HAEMATOLOGY

RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time : 3 hours (180 Min) **Maximum : 100 marks**

Answer ALL questions in the same order.

I. Elaborate on :	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Discuss the management of philadelphia chromosome negative of adult acute lymphoblastic leukemia.	11	35	15
2. Describe the congenital marrow failure syndromes and discuss the management of Fanconi anemia.	11	35	15
II. Write notes on :			
1. Hb H disease.	4	10	7
2. Decitabine.	4	10	7
3. Type 1 von Willebrand disease.	4	10	7
4. Hemophagocytic lymphohistiocytosis.	4	10	7
5. Molecular mechanisms of iron homeostasis.	4	10	7
6. Congenital neutropenia.	4	10	7
7. Disease monitoring in CML on treatment with tyrosine kinase inhibitors.	4	10	7
8. Induced pluripotent stem cells.	4	10	7
9. Dendritic cells.	4	10	7
10. Eculizumab.	4	10	7

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[LB 067] **AUGUST 2012** **Sub. Code: 1404**

D.M – CLINICAL HAEMATOLOGY

Paper – IV RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: 3 hours **Maximum: 100 marks**

(180 Min) Answer ALL questions in the same order.

I. Elaborate on:	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Discuss the pathophysiology, molecular and immune defects and diagnosis in children with congenital bone marrow failure syndromes.	16	35	15
2. Discuss in detail the diagnosis, prognostication and management of a 35 year old male with Acute Myeloid Leukemia.	16	35	15
II. Write Notes on:			
1. Clofarabine.	4	10	7
2. Risk stratification of myelofibrosis.	4	10	7
3. Optimal frontline therapy for multiple myeloma.	4	10	7
4. Echinocandins.	4	10	7
5. Role of Hypomethylating agents in MDS.	4	10	7
6. Brentuximab.	4	10	7
7. Use of Rituximab in hematological disorders.	4	10	7
8. Role of 2^{nd} generation TKI as first line therapy of CML.	4	10	7
9. Posaconazole.	4	10	7
10. Gene therapy.	4	10	7

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(LD 067) **AUGUST 2013** **Sub. Code:1404**

D.M. – CLINICAL HAEMATOLOGY
Paper – IV RECENT ADVANCES IN HAEMATOLOGY
Q.P.Code: 161404

Time: Three Hours **Maximum: 100 marks**

I. Elaborate on: **(2X15=30)**

1. Describe in detail the processes involved in gene therapy, the vectors used and its applications in the treatment of haematological disorders.

2. Describe in detail the diagnosis and management of chronic myeloid leukemia (CML) including the use of newer drugs as first line agents and molecular monitoring while on treatment.

II. Write notes on: **(10X7=70)**

1. Micafungin
2. Induced pluripotent stem cells
3. Gene therapy for hemophilia
4. Carfilzomib
5. Immunotherapy against Cytomegalovirus after BMT
6. Haplo-identical transplantation
7. Scoring systems in MDS
8. BRAF mutation
9. Kinase targeted strategies in CLL
10. Clofarabine

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(LF 067) **AUGUST 2014** **Sub. Code:1404**

D.M. – CLINICAL HAEMATOLOGY

Paper – IV RECENT ADVANCES IN HAEMATOLOGY

Q.P.Code: 161404

Time: Three Hours **Maximum: 100 marks**

I. Elaborate on: **(2X15=30)**

1. Discuss in detail the principles of a haplo-identical stem cell transplant and the rationale of the currently used GVHD prophylaxis regimen in this procedure.
2. Discuss the different types of factor concentrates available for the treatment of haemophilia and recent advances.

II. Write notes on: **(10X7=70)**

1. Treosulphan.
2. Calreticulin mutations.
3. Drugs that target CD20.
4. Gene therapy in haemophilia.
5. Arsenic resistance.
6. NK cell therapy.
7. Atypical hemolytic anemic syndrome.
8. Bendamustine.
9. Newer proteasome inhibitors.
10. Induced pluripotent stem cells.

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(LG 067) **FEBRUARY 2015** **Sub. Code:1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P.Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss risk stratification and current management of a patient with essential thrombocythemia.
2. Discuss the diagnosis, prognostication, current management strategies and new therapeutic approaches in chronic lymphocytic leukemia.

II. Write notes on: **(10 x 7 = 70)**

1. Pegylated L-asparaginase.
2. Gene expression profiling.
3. Nelarabine.
4. Calreticulin mutation.
5. Dabigatran Etexilate.
6. Cubam complex.
7. HDAC Inhibitors
8. Mechanism of JAK2V617F mutation mediated constitutive activation of JAK
9. Relevance of BRAF mutations in Haematology
10. Current status of gene therapy for haemophilia

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(LH 067) **AUGUST 2015** **Sub. Code:1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P.Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the normal physiology of NK cell function and the potential role of NK cell therapy in acute leukemia.

2. List out Tyrosine kinase inhibitors and discuss their role in hematological malignancies.

II. Write notes on: **(10 x 7 = 70)**

1. Heat shock proteins.
2. Clofarabine.
3. Thrombopoeitin receptor agonists.
4. Erythroferrone.
5. Epratuzumab.
6. Combination chelation therapy.
7. Cytokine receptor structure.
8. Marivabir.
9. Mechanism of CMV resistance to gancyclovir.
10. Next generation JAK2 inhibitors.

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(LI 067) FEBRUARY 2016 **Sub. Code:1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P.Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe CAR T Cell therapies for hematological malignancies.

2. Discuss the advances in the diagnosis of diffuse large B cell lymphoma and its implications for therapy.

II. Write notes on: **(10 x 7 = 70)**

1. Iron refractory iron deficiency anemia.
2. Rivaroxaban.
3. Dyskeratosis congenita.
4. Role of BCL11A in hemoglobin switching and its implications for therapy.
5. Immune reconstitution after allogeneic stem cell transplantation.
6. Novel agents for multiple myeloma.
7. JAK2 inhibitors.
8. Implementing a blood utilization program.
9. Long acting coagulation factor concentrates in hemophilia.
10. Clinical applications of genome editing in hematological diseases.

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(LJ 067) AUGUST 2016 **Sub. Code:1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P.Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the diagnosis and management of Myelofibrosis.
2. Autologous transplant in Hematology.

II. Write notes on: **(10 x 7 = 70)**

1. CAR modified T cells in B cell malignancies.
2. Smoldering myeloma.
3. Stem cell mobilization for transplant.
4. Drug treatment of Myelodysplastic Syndrome (MDS).
5. Brentuximab.
6. Haematological manifestations of celiac disease.
7. Management of Thalassemia Intermedia.
8. Parenteral iron therapy.
9. Problems in the Diagnosis of DVT in a pregnant patient.
10. Massive blood transfusions.

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(LK 067) FEBRUARY 2017 **Sub. Code:1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P.Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the recent interest in the use of interferon in the management of myeloproliferative neoplasms and impact of underlying mutations in predicting response to therapy.

2. Discuss the diagnosis, prognostication, current management strategies and new therapeutic approaches in chronic lymphocytic leukemia.

II. Write notes on: **(10 x 7 = 70)**

1. Pegylated L-asparaginase.
2. Technology associated with long acting factor concentrates.
3. Nelarabine.
4. TP53 mutation in AML.
5. Novel oral anti-coagulants.
6. Role of JAK-STAT inhibitors in GVHD.
7. Histone deacetylase (HDAC) inhibitors.
8. Heat shock proteins.
9. Clofarabine.
10. Thrombopoietin receptor agonists.

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(LL 067) AUGUST 2017 **Sub. Code:1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P.Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe the various methods of performing a haplo identical transplant and describe its role in the management of hematological disorders.

2. Discuss the role of immunotherapy in the management of refractory hematological malignancies.

II. Write notes on: **(10 x 7 = 70)**

1. PDH blockade.
2. Blinatumomab.
3. Thrombopoeitin receptor agonists in ITP.
4. Hypomethylating agents in MDS.
5. Ixazomib.
6. Combination chelation therapy.
7. Cytokine receptor structure.
8. BK virus in HSCT.
9. Treatment of gancyclovir resistance CMV.
10. Role of JAK2 inhibitors in GVHD.

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(LN 067) AUGUST 2018 **Sub. Code: 1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P.Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Describe the principles of gene therapy and some of the recent advances in management of hematological diseases with such therapy.

2. Molecular monitoring of therapy with tyrosine kinase inhibitors in CML and its implications.

II. Write notes on: **(10 x 7 = 70)**

1. Adoptive T Cell therapy for treatment of infections in hematology.
2. Genome editing approaches to treatment of hematological disorders.
3. Proteasome inhibitors.
4. Diagnosis and treatment of Mastocytosis.
5. Diagnosis of venous thromboembolism.
6. Graft versus leukemia effect.
7. Immunological therapy for multiple myeloma.
8. Clonal hematopoiesis of indeterminate potential (CHIP).
9. Advances in the treatment of myelofibrosis.
10. Monoclonal antibodies for treatment of CLL.

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(LP 067) AUGUST 2019 **Sub. Code: 1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the mechanisms of action of nonfactor pharmacological agents in coagulation disorders. Enumerate their role in treatment of these disorders including monitoring and potential complications.

2. Discuss adoptive immunotherapy and its role in haematology.

II. Write notes on: **(10 x 7 = 70)**

1. Multidrug resistant bacterial infections.
2. Newer agents to treat acute GVHD .
3. Echinocandins.
4. Ruxolitinib in haematological disorders.
5. Coagulation factor concentrates: past, present and future.
6. HLA mismatched stem cell transplantation.
7. Biomarkers of acute GVHD.
8. Regimen related toxicity (RRT) in patients undergoing allogeneic stem cell transplantation.
9. Immune checkpoint inhibitors.
10. Reversal of new oral anticoagulants.

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(LQ 067) FEBRUARY 2020 **Sub. Code: 1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the recent changes in the WHO 2016 criteria for diagnosis of myeloproliferative neoplasms.

2. Discuss the diagnosis and relevance of Philadelphia like acute lymphoblastic leukemia. Also discuss potential strategies to treat these conditions.

II. Write notes on: **(10 x 7 = 70)**

1. Anti-Leukemia Activity of the Selective BCL-2 Inhibitor ABT-199.
2. Role of hypo-methylating agents in high risk young adults with acute myeloid leukemia.
3. Thrombopoeitin receptor agonists and aplastic anemia.
4. Liposomal CPX-351 in acute myeloid leukemia.
5. Targeting microenvironment in leukemia.
6. Artesunate in the management of cytomegalovirus infection.
7. Gene editing strategies.
8. Potential role of Pioglitazone in the management of chronic myeloid leukemia.
9. Potential role and rationale of IL2 in management of acute graft versus host disease.
10. Nontransplant therapy in aplastic anemia.

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(LR 067) NOVEMBER 2020 **Sub. Code: 1404**

(AUGUST 2020 SESSION)

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the present status of haplo-identical stem cell transplantation including different techniques, donor selection and outcomes.

2. Discuss the recent advances in management of primary systemic amyloidosis.

II. Write notes on: **(10 x 7 = 70)**

1. Blinatumomab in ALL
2. Newer diagnostic tools to assess iron status
3. Cytotoxic T cells against CMV
4. Gauchers disease
5. Ceftazidime/Avibactam
6. Use of NGS in hereditary hemolytic anemia
7. Gene therapy in treatment of thalassemia
8. Hepcidin
9. IDH inhibitors in AML
10. ICUS – Idiopathic cytopenia of undetermined significance.

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(DM 0821) AUGUST 2021 **Sub. Code: 1404**

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the present status of haplo-identical stem cell transplantation including different techniques, donor selection and outcomes.

2. Discuss the pathophysiology, clinical manifestations, diagnosis and treatment of primary systemic amyloidosis.

II. Write notes on: **(10 x 7 = 70)**

1. Gene therapy.
2. Fitusiran.
3. Dendritic cell.
4. Cutaneous T Cell lymphoma.
5. Isavuconazole.
6. gene expression profiling In DLBCL.
7. Dyskeratosis congenital.
8. Daratumumab.
9. Diagnostic criteria for HLH.
10. Erythroferone.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0822] AUGUST 2022 Sub. Code :1404

D.M. – CLINICAL HAEMATOLOGY

Paper IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the concept of CAR-cells and the currently available products for haematological disorders.

2. Discuss the recent advances in the management of myelodysplastic syndromes.

II. Write notes on: **(10 x 7 = 70)**

1. Gene therapy for sickle cell disease.
2. Pacritinib.
3. Minimal residual disease assessment in multiple myeloma.
4. Immune cell therapy for viral infections.
5. Emicizumab.
6. Gene editing for haematological disorders.
7. Cell free DNA for diagnosis in haematological disorders.
8. Clonal haematopoiesis.
9. Advances in the diagnosis and risk stratification of chronic lymphocytic leukemia.
10. Nextgen sequencing approach to diagnosis of haematological disorders.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0823] AUGUST 2023 Sub. Code :1404

D.M. – CLINICAL HAEMATOLOGY

PAPER IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Cancer associated thrombosis:
   a) Role of platelets in pathogenesis
   b) Diagnosis of the entity and
   c) Prevention and its treatment with special note on role of oral Xa inhibitors.

2. Acute myeloid leukemia:
   a) Risk stratification
   b) Role of MRD evaluation and
   c) Role of immunotherapy in management of relapsed and refractory disease.

II. Write notes on: **(10 x 7 = 70)**

1. Role of circulating tumour DNA in prognostication of lymphoma.
2. Immunosuppression in Antiphospholipid syndrome.
3. Thrombosis and bleeding complication in myeloproliferative neoplasms.
4. Newer diagnostic tools to assess iron status.
5. Minimal residual disease in stem cell transplantation outcomes.
6. Bypassing agents in haemophilia patients with inhibitors.
7. Gene therapy in treatment of Thalassemia.
8. Immunotherapy in management of multiple myeloma.
9. Delayed chemotherapy induced nausea and vomiting.
10. Intrachromosomal amplification of chromosome 21 in acute lymphoblastic leukemia.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0124] **JANUARY 2024** **Sub. Code :1404**

D.M. – CLINICAL HAEMATOLOGY

PAPER IV – RECENT ADVANCES IN HAEMATOLOGY

Q.P. Code: 161404

Time: Three Hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Haploidentical donor stem cell transplantation.
2. Recent advances in the management of acute lymphoblastic leukemia.

II. Write notes on: **(10 x 7 = 70)**

1. Virus specific T cells.
2. CAR T cell therapy.
3. Gene therapy for thalassemia and sickle cell anemia.
4. Immune tolerance induction.
5. Next generation sequencing.
6. Emicizumab.
7. BTK inhibitors.
8. Asciminib.
9. Monoclonal gammopathy of renal significance.
10. CHIP, ICUS and CCUS.

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