EHA SINAVI DENEY□M□

Dr. Selin KÜÇÜKYURT KAYA

Ankara Etlik Şehir Hastanesi

II. Ulusal Hematoloji Eğitim Günü / HEM-TUYEK Program Değerlendirme Toplantısı, 22 Eylül 2023, Ankara

AVRUPA HEMATOLOJ□ SINAVI NED□R?

- Avrupa Hematoloji Müfredatı kriterlerine göre kişinin yeterli hematoloji bilgisine sahip olup olmadığını belgelemeyi amaçlar
- Avrupa'da hematoloji eğitim/öğretiminin denkliği için önemli bir adım

- İngilizce, 100 çoktan seçmeli soru, 2.5 saat süre
- Sınavı geçen katılımcılara sertifika verilmekte

- Sınav başlıca uzmanlık eğitimini yeni tamamlamış hematologlara yönelik
- Bilgilerinin hala güncel olup olmadığını değerlendirmek isteyen kıdemli hematologlara da açık

SINAVIN ÖNEM□

- Avrupa'daki tek hematoloji sınavı
- Avrupa Hematoloji Müfredatını temel alır
- Genç hematologların sonraki eğitimi için diğer Avrupa ülkelerine kabulü ..
- Bazı ülkelerde «research grants» erişimini kolaylaştırır
- İsviçre'deki resmi sınav
- Bazı ülkelerde son değerlendirme notunun bir kısmı

	Section
1.	Clinical hematology: Benign disorders
2.	Clinical hematology: Myeloid malignancies
3.	Clinical hematology: Lymphoid malignancies and plasma cell disorders
4.	Treatment of hematological disorders
5.	Laboratory diagnoses
6.	Thrombosis and hemostasis
7.	Transfusion medicine
8.	General skills

SORU KALİTESİ

- Soru Yazar Grubu .. kalite, seviyeye uygunluk ve müfredatı kapsaması
- Grup, eğitimciler tarafından seçilen ve eğitilen 20 deneyimli hematologdan oluşur
- İnceleme Grubu, soru seçiminin müfredatın tüm bölümlerini temsil edip etmediğini yeniden değerlendirir
- EHA, sınavın kalitesi ve geçme puanının bağımsız değerlendirilmesi için uluslararası profesyonel bir araştırma enstitüsü ile işbirliği yapar

SINAVA NASIL ÇALIŞALIM?

- EHA Sınavı yılda bir kez yapılır, bu yıl 7.'si yapıldı

- Progress Test, önceki yıllara ait bir EHA sınavına dayanan ve kişinin bilgi eksiği olan konuları belirlemeyi amaçlayan çevrimiçi bir test

The **Progress test**, modeled on previous European Hematology Exams, is available on the EHA Campus twice each year in March and November.

In 2022, 90% of the EHA exam candidates who took the progress test passed the exam.

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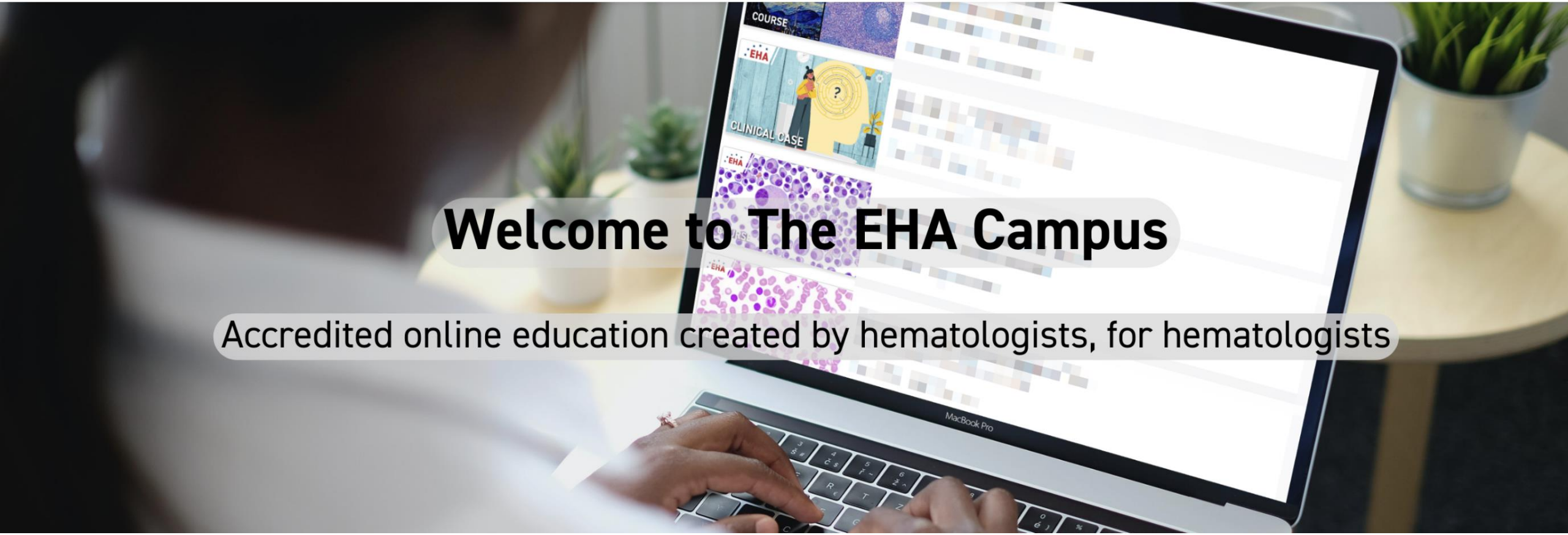

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European Hematology Progress Test - November 2022

Online · Passed · Nov 01, 2022 12:00 AM to Dec 08, 2022 8:00 AM

Description | Access/Content

This Progress Test is open from November 1 until December 7, 2022.

After this period, you will still be able to access your results and feedback for three months, in order to guide your studies.

If you have issues accessing the Progress Test, please send an email to education@ehaweb.org.

The Progress Test is an online learning tool to:

- assess your hematology knowledge
- measure your progress from one year to the next.

You can also use it to practice for the European Hematology Exam.

The Progress Test is primarily designed for trainees and early-career hematologists. If you are more experienced, you are also welcome to participate. The test, modeled on previous European Hematology Exams, consists of 93 multiple choice questions.

You will receive two types of feedback:

- Immediately after completing the test, you will receive feedback on your answer choices, with an explanation, including references for more in-depth reading and studying.
- Within three weeks of the test's closure, you will also receive feedback on your overall performance in relation to the passing grade of the European Exam and results per Curriculum section. This can further support you in planning your professional development.

Estimate duration: You will need to plan a block of 2.5 hours, without interruption, in order to take this test. For reviewing the feedback and references you can take the time you need.

CME/CPD Accreditation: 3 credit points

EBAH ACCREDITED

Status
You have finished this course

Partner

EHA would like to thank for their valuable contribution:

- The Chair and Co-chair of the Progress Test, Marielle Wondergem and Gunnar Birgegård
- The EHA Curriculum-Exam Committee, chaired by Tomás Navarro.
- All Question Writers who were involved in writing and/or reviewing the questions: Aleksandar Mijovic, Alicia Rovó, Anna Eriksson, Antonio Almeida, Campbell Tait, Carlos Fernández de Larrea, Cem Ar, Cheng-Hock Toh, Esperanza Lavilla, Estella Matutes, Esther Oliva, Gemma Moreno Jiménez, Gueorgui Balatzenko, Gunnar Birgegård, Gunnar Larfors, Hamdi Akan, Johanna Ungerstedt, Krzysztof Mądry, Mahesh Prahladan, Margarita Guenova, Marielle Wondergem, Peter te Boekhorst, Samantha Benghiat, Tomás Navarro.
- The final editor: Barbara Bain

European Hematology Progress Test - March 2023

Online Passed Mar 01, 2023 12:00 AM to Apr 03, 2023 8:00 AM

Description Access/Content

This Progress Test is open from March 1st until April 2nd, 2023.

After this period, you will still be able to access your results and feedback for three months, in order to guide your studies.

If you have issues accessing the Progress Test, please send an email to exam@ehaweb.org.

The Progress Test is an online learning tool to:

- assess your hematology knowledge
- measure your progress from one year to the next.

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Used for accreditation
Yes

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2023 European Hematology Exam - Access to Practice Test on EHA Campus

E

exam <exam@ehaweb.org>

Kime: Siz

11.05.2023 Per 17:14

Dear Exam Candidate,

You have registered for taking the 2023 European Hematology Exam.

To help you with your exam preparations we are happy to provide you with access to a Practice Test.

Please note that this Practice Test is only being made available to our exam candidates.

The Practice Test is an online learning tool designed to help you prepare for the European Hematology Exam. Based on previous exams, it consists of 72 multiple choice questions, and the passing score for this practice test is 56%. It's important to note that although the questions are from a previous exam, the passing score for the 2023 Exam may differ.

Upon completing the test, you will receive feedback on your answer choices, along with explanations and references for further reading and studying. Please be aware that this feedback was last updated in January 2022.

You can access the Practice Test by clicking on the link provided below.

Once you click on the below link, from the menu on the top, please click on **EHA Members** and then on **Login**, as shown below:

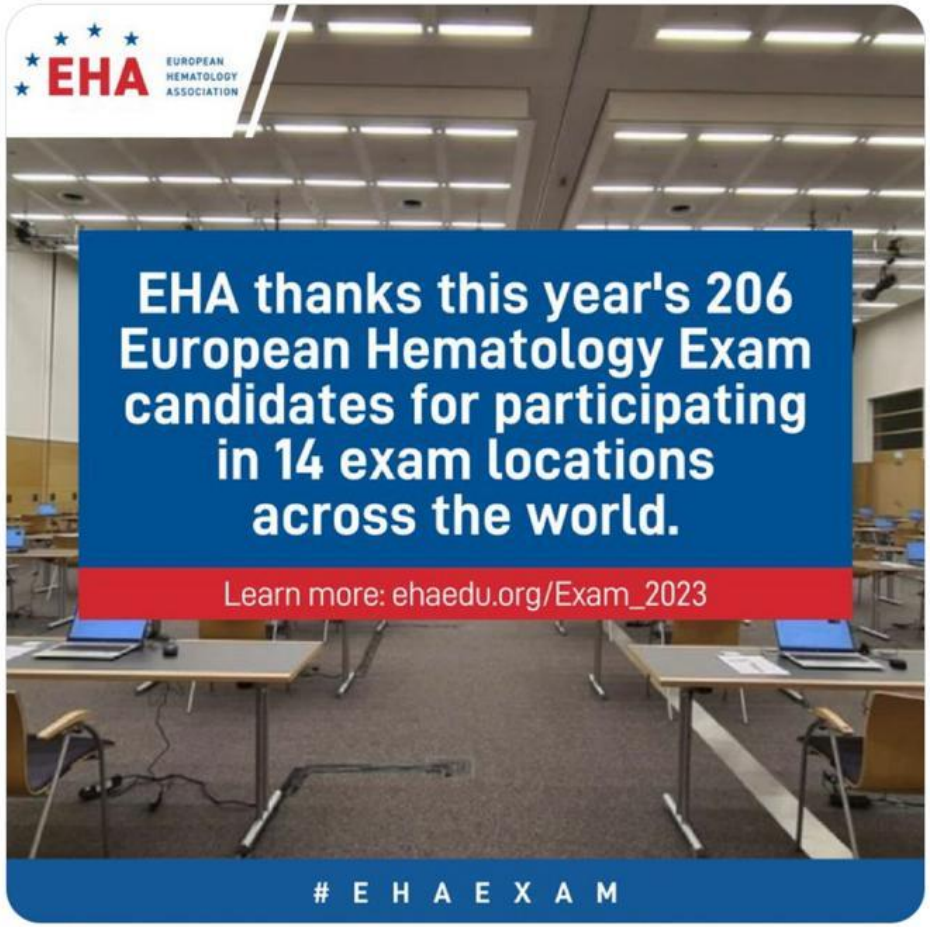
Local time	
13.30 – 14.30	Arrival candidates Picking up Exam registration confirmation at registration desk, show ID Coffee/tea /bathroom break Candidates store personal belongings
14:30	Candidates enter the exam room *<u>Please note:</u> once you enter the exam room you may not leave the room unless escorted by a supervisor until you have submitted your exam*
14:40	Exam registration closes
14:50 - 14:55	Welcome and instructions by the representative of the National Society in your country
14:55 – 15:00	Getting ready
15:00 – 17:30	The exam

THD @TurkHemaDernegi · 8.06.2023

EHA ile ortak düzenlenen ve tüm Avrupa ile eşzamanlı gerçekleşen Avrupa Hematoloji Sınavı başarıyla tamamlandı. #ehaexam

European Hematology A... · 22.06.2023

#EHA thanks all 206 candidates who took the 2023 #EHAExam: 68 candidates joined us at the main session in Frankfurt and a further 138 candidates participated in 13 exam locations in countries within and outside of Europe. Learn more about the exam: ehaedu.org/Exam_2023



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PROGRESS TEST 2022 - QUESTION 12

12. You are involved in a clinical trial as the primary investigator. While visiting the surgery department, you meet the wife of one of the trial participants. She informs you that her husband was hospitalized due to acute pancreatitis. He is now doing well. Acute pancreatitis is a known complication of one of the drugs in the trial.

How do you report this event?

Please select the right answer.

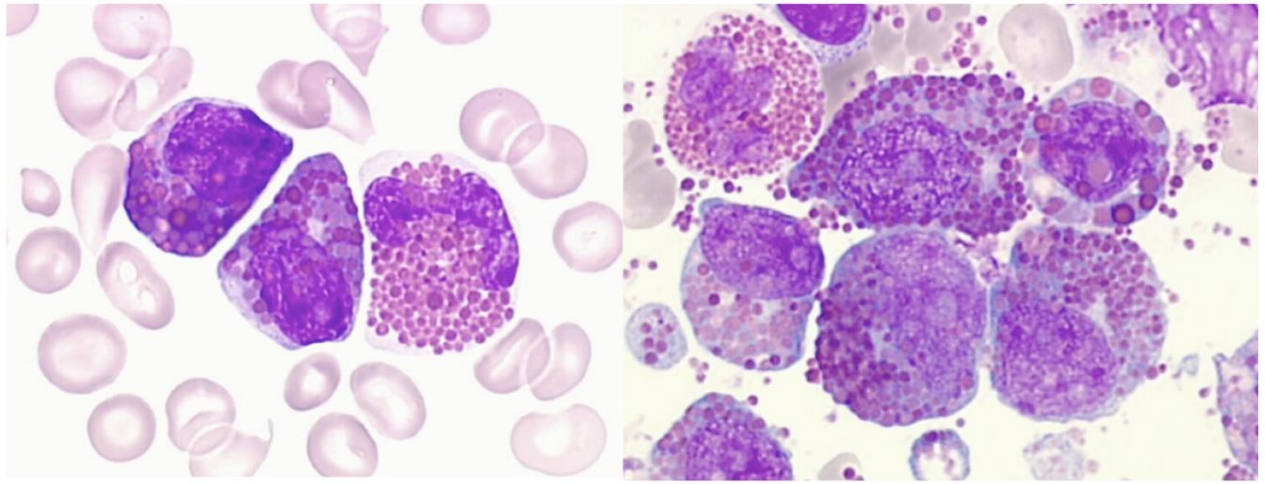
Hospitalization and a serious medical condition are both criteria for Severe Adverse Event/Reaction.

Ref: ICH Harmonised Tripartite Guideline For Good Clinical Practice - Clinical Safety Data Management: Definitions And Standards For Expedited Reporting E2a Guideline.

- a) Adverse event/reaction.
- ✓ b) Serious adverse event/reaction
- c) SUSAR (Suspected Unexpected Severe Adverse Reaction)
- d) Make a note in the patient file, do not need to report
- e) No action is needed

59. What is the most likely genetic abnormality associated with the morphological findings as shown in the pictures of peripheral blood and bone marrow aspirate?

Please select the right answer.



Abnormal eosinophils with basophilic granules have been associated with acute myeloid leukemia with the inversion 16 cytogenetic abnormality.

Ref: Le Beau MM, Larson RA, Bitter MA, et al. Association of an inversion of chromosome 16 with abnormal marrow eosinophils in acute myelomonocytic leukemia. A unique cytogenetic-clinicopathological association. N Engl J Med. 1983. 309:630-636.

The association between acute lymphoblastic leukemia (ALL) and eosinophilia was also described. The most common cytogenetic abnormality associated with this presentation is t(5;14)(q31;q32) resulting in an overproduction of IL-3; this entity has been recently recognized as a distinct subtype among B-cell ALL in the WHO classification. However, lymphoblasts along with eosinophils without abnormal morphology are identified in peripheral blood and bone marrow. The *ETV6* gene, located at 12p13, belongs to a large family of transcription factors and has been previously implicated in the pathogenesis of multiple hematological malignancies, occasionally but not always related with eosinophilia with preserved morphology

Ref: E. De Braekeleer, N. Douet-Guilbert, and F. Morel, "ETV6 fusion genes in hematological malignancies: a review," Leukemia Research, vol. 36, no. 8, pp. 945–961, 2012.

- a) t(5;14)(q31.1;q32.1); IGH/*IL3*
- b) t(7;12)(q22;p13) *ETV6* rearranged
- c) t(8;21)(q22;q22) *RUNX1/RUNX1T1*
- d) t(15;17) (q24;q21) *PML/RARA*
- ✓ e) inv(16) (p13;q22) *CBFB/MYH11*

PROGRESS TEST 2022 - QUESTION 55

55. A 74-year-old man with a history of ischemic cardiomyopathy is diagnosed with MDS with excess blasts with normal karyotype and high-risk IPSS-R. Initially, there was no need for treatment and blood counts were monitored regularly. Serum EPO was 212 U/L (normal: 4-14 U/L). After six months, his platelet and hemoglobin counts started to decrease, leading to weekly transfusions.

What is the best treatment for this patient?

Please select the right answer.

For patients with high-risk MDS who are not candidates for hematopoietic SCT, hypomethylating agents are the best option until disease progression, relapse or drug intolerance.

Ref: Fenaux P et al. ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2021; 32: 142–156; NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®): myelodysplastic syndromes Version 3.2021 (2021).

- a) Erythropoiesis stimulating agent plus G-CSF
- b) Erythropoiesis stimulating agent plus TPO agonist
- ✓ c) Azacitidine
- d) Allogeneic SCT
- e) Lenalidomide

The Progress Test

PROGRESS TEST 2022 - QUESTION 01

1. A 30-year-old woman has a prior history of deep vein thrombosis (DVT) in her left leg, which occurred while she was on an oral contraceptive drug. At the time, she was found to be homozygous for factor V Leiden mutation and anti-coagulated for three months, resulting in complete resolution of the DVT. She has now been referred to the hematology department as she is five weeks pregnant. Her physical examination is unremarkable. Her complete blood count and blood biochemistry are normal. A Doppler ultrasound reveals no signs of thrombosis in her left leg.

Select the best treatment strategy for this patient during her pregnancy.

Please select the right answer.

Homozygous FV Leiden increases the risk of thrombosis. This risk is higher in a patient with additional risk factors such as pregnancy and a prior history of DVT Ref: Chest 2016;149(2):315.352. Although the initial VTE attack seems to be provoked by the use of an oral contraceptive, current evidence suggests that the risk for recurrence is high in patients with homozygous FVL mutation, especially in the context of pregnancy. Hence, the ASH Guidelines' recommendation stating: "For women not already receiving long-term anticoagulant therapy who have a history of VTE that was unprovoked or associated with a hormonal risk factor, the ASH guideline panel recommends antepartum anticoagulant prophylaxis with low molecular weight heparins over no anticoagulant prophylaxis."

Ref: Blood Adv 2018; 2(22): 3317-3359

- a) Salicylic acid throughout the pregnancy and for six weeks postpartum
- ✓ b) Prophylactic dose of low molecular weight heparin throughout the pregnancy and for six weeks postpartum
- c) Compression stockings throughout the pregnancy
- d) Dabigatran for six weeks after delivery
- e) Therapeutic dose of low molecular weight heparin for the first three months and warfarin for the last two trimesters and postpartum

PROGRESS TEST 2022 - QUESTION 31

31. A 35-year-old HIV-infected man presented with systemic symptoms and a large mass in the oral cavity. Physical examination showed cervical and axillary lymphadenopathy. He has pancytopenia with normal serum protein electrophoresis and no evidence of lytic bone lesions. Immunoblasts and plasmablasts were found in the mass and in the bone marrow. They showed a CD79b+, EMA (epithelial membrane antigen)+, CD30+, CD38+, CD138+, MYC+ phenotype. CD20 and PAX-5 were negative. The proliferation rate was 98%. EBV (EBERs) was positive and *MYC* was rearranged with IG.

What is the most likely diagnosis?

Please select the right answer.

The diagnosis is plasmablastic lymphoma. This is typically seen in HIV or immunocompromised patients, is EBV-driven and often has *MYC* rearrangement. Primary extraosseus plasmacytoma usually shows tissue infiltration by mature plasma cells, lacks *MYC* rearrangement and does not involve the bone marrow. Plasma cell myeloma with extraosseus infiltrates usually occurs during the evolution or at relapse, >95% of cases have an M band and are EBV-negative. Diffuse large B-cell lymphoma with plasmablastic morphology is strongly CD20- and PAX-5 positive. Non-secretory myelomas have the features of secretory myelomas such as bone lytic lesions and no extramedullary involvement.

Ref: Lopez A et al Plasmablastic lymphoma: current perspectives. Blood Lymp Cancer 2018, 8:63-70

- a) Primary extraosseous plasmacytoma
- b) Burkitt lymphoma
- c) Diffuse large B-cell lymphoma NOS
- ✓ d) Plasmablastic lymphoma
- e) Non-secretory myeloma

PROGRESS TEST 2022 - QUESTION 17

17. A 33-year-old male patient has been diagnosed with severe aplastic anemia and is being considered for upfront allogeneic stem cell transplantation. The patient has positive cytomegalovirus (CMV) serology. Almost incredibly, the patient has five HLA-matched siblings, all willing to donate stem cells.

Which donor should be chosen for donation?

Please select the right answer.

If multiple sibling donors are available to a male patient with sAA, male donors with CMV match are preferred. Bone marrow harvest is preferred in aplastic anemia patients due to lower risk of GvHD.

- a) Sister, 25 years, CMV-, only willing to donate peripheral blood stem cells
- ✓ b) Brother, 27 years, CMV+, only willing to donate bone marrow stem cells
- c) Sister, 31 years, CMV-, willing to donate both marrow and peripheral blood stem cells
- d) Brother, 35 years, CMV+, only willing to donate peripheral blood stem cells
- e) Sister, 37 years, CMV+, willing to donate both marrow and peripheral blood stem cells

PROGRESS TEST 2022 - QUESTION 56

56. Which of the following is the best lab test for discriminating transfusion-related acute lung injury (TRALI) from transfusion-associated circulatory overload (TACO)?

Please select the right answer.

Currently, BNP and NT-proBNP are the primary diagnostic biomarkers researched for TACO. An NT-proBNP ratio greater than 1.5 is supportive of TACO, and low levels of BNP or NT-proBNP can exclude TACO. However, they are unreliable in critically ill patients. Other biomarkers, including cytokines and the pulmonary edema fluid-to-serum protein ratio have not yet been sufficiently investigated for clinical use.

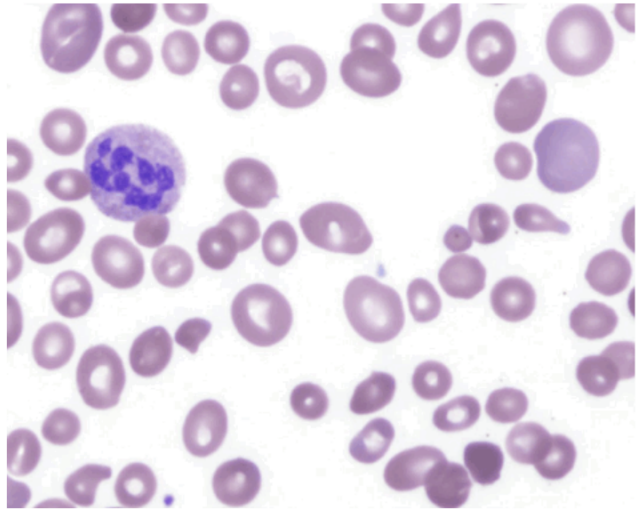
Ref: Klanderman et al. Transfusion. 2019 Feb; 59(2): 795–805. RC Skeate, T Eastlund. Current opinion Hematology 2007;14:682-6.

- ✓ a) Brain natriuretic peptide
- b) Arterial blood oxygen saturation
- c) LDH
- d) C-reactive protein
- e) White blood cell count

24. A 54-year-old vegan woman complains of fatique, sleep disturbances, trouble concentrating, numbness in the feet and tingling in her fingers. On physical examination pallor and tachycardia are revealed, as well as reduced vibration sense in both legs on neurologic examination. Complete blood cell counts show a hemoglobin level of 80 g/L; hematocrit: 0.19; MCV: 118 fL; MCH: 41 pg; reticulocytes: 0.7%; white blood cells: 4.2 x 10^9/L; platelets: 130 x 10^9/L. Further laboratory studies show elevated total bilirubin 38 µmol/L [reference range <21 µmol/L], direct bilirubin 8 µmol/L [reference range < 6 µmol/L]; LDH - 1230 U/L [reference range 120-250 U/L]. Peripheral blood smear is shown in the picture.

Which is the most appropriate laboratory test to support the diagnosis?

Please select the right answer.



The blood smear shows macrocytes and megalocytes, as well as a hypersegmented neutrophil. In addition to the data for low hemoglobin and hematocrit, high MCV and MCH, elevated LDH, low reticulocytes, and mild thromocytopenia, these findings are consistent with megaloblastic anemia. It is most commonly due to Vitamin B12 or Virtamin B9 deficiency. Neurological symptoms are consistent with Vitamin B12 deficiency and do not occur in the setting of folate deficiency. Iron deficiency can result in decreased iron stores and ferritin levels, however it is microcytic and does not result in elevated LDH. There is a well established relationship between hepcidin and erythropoiesis, however decreased levels are a sensitive indicator of iron deficiency.

Reference: Scordino, Teresa. “Hypersegmented Neutrophil.” hematology.org. hematology.org, February 17, 2016. https://imagebank.hematology.org/image/60400/hypersegmented-neutrophil?type=upload.

- ( ) Test for decreased serum folate levels
- ( ) Test for decreased serum hepcidin levels
- ✓ (•) Test for decreased serum vitamin B12 levels
- ( ) Test for decreased serum ferritin levels
- ( ) Test for decreased bone marrow iron stores

PROGRESS TEST 2022 - QUESTION 35

35. A 56-year-old male patient has severe rheumatoid arthritis. Over the years, he has also suffered from a moderate, normocytic anemia, presumably linked to the inflammatory disease. Hemoglobin levels have varied between 90 and 100 g/L, but he has not been transfusion-dependent. After starting treatment with interleukin 6 (IL-6) receptor inhibitor tocilizumab against his RA, his anemia gradually improves.

Which mechanism is most likely to have caused this improvement?

Please select the right answer.

Hepcidin up-regulation by IL-6 is a key event in the anemia of inflammation. Although tocilizumab is not registered for treating anemia, clinical studies have shown this drug's effect on inflammatory anemia. Degradation of ferroportin, and decrease in ERFE would worsen anemia. Tocilizumab does not increase erythropoietin production (studies suggest the opposite).

- a) IL-6 inhibition leads to a decrease in erythroferrone (ERFE)
- b) IL-6 inhibition leads to degradation of ferroportin
- ✓ c) IL-6 inhibition leads to down-regulation of hepcidin
- d) IL-6 inhibition leads to an increased erythropoietin production
- e) IL-6 inhibition leads to an increased release of intrinsic factor

PROGRESS TEST 2022 - QUESTION 02

2. A 16-year-old boy presented with an abdominal mass. He underwent surgery and the biopsy confirmed a diagnosis of Burkitt lymphoma. Serum LDH and uric acid were markedly elevated and creatinine was slightly elevated.

Which approach is most effective for reducing uric acid levels so as to prevent tumor lysis syndrome?

Please select the right answer.

The most powerful drug for reducing uric acid is rasburicase, a recombinant version of urate oxidase, which is an enzyme that metabolizes uric acid to allantoin.

Ref: Galardy PJ, Hochberg J, Perkins SL, Harrison L, Goldman S, Cairo MS. Rasburicase in the prevention of laboratory/clinical tumour lysis syndrome in children with advanced mature B-NHL: a Children's Oncology Group Report. Br J Haematol. 2013;163(3):365-372. doi:10.1111/bjh.12542

- a) Allopurinol
- ✓ b) Rasburicase
- c) Sodium bicarbonate
- d) Furosemide
- e) Spironolactone

PROGRESS TEST 2022 - QUESTION 22

22. A 14-year-old boy is admitted with a two-day history of profuse epistaxis. His blood counts show:
Hemoglobin 82 g/L
WBC $2.0x10^9$ /L
Platelet count $23x10^9$ /L
He is 148 cm tall and has a shortened left thumb due to an absent proximal phalanx. He was born with hypospadia.

Which diagnosis would you suspect?

Please select the right answer.

Fanconi anemia is an autosomal recessive disorder characterized by errors in DNA repair. Patients classically have bone and urogenital malformations, elfin facial features and short stature. Bone marrow aplasia and leukemic transformation are frequent, as are mucosal and skin carcinomas, especially of the head and neck. Diagnosis is through demonstration of increased chromosomal fragility when cultured marrow cells are exposed to de-epoxy-butane (DEB) or mitomycin.

- a) ITP
- ✓ b) Fanconi anemia
- c) Dyskeratosis congenita
- d) Childhood MDS
- e) Aplastic anemia

Summary Slide: Board Pearls for Bone Marrow Failure

- **Diagnostics:** key is to determine whether a patient has acquired or inherited BMF
  - Inherited BMF is associated with congenital anomalies, slow cytopenia onset, non-hematologic cancer and organ failure risk.
  - Critical for determining treatment, including family donor selection for stem cell transplant
- **Acquired aplastic anemia**
  - Treatment with immune suppression therapy (ATG, cyclosporine, eltrombopag) or stem cell transplant (MSD-BMT generally considered first line)
  - 20-30% risk of clinically significant clonal evolution: PNH and 6p CNLOH are specific to acquired AA; MDS is not.
- **Inherited bone marrow failure**

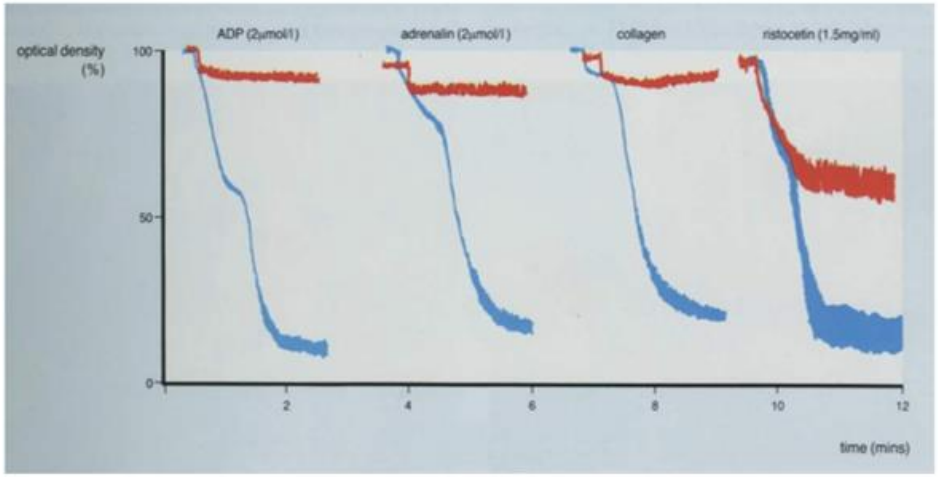
Condition	# Genes	Screening Tests	Physical features
Fanconi Anemia	>21	Abnormal chromosome breakage to DEB/MMC	VACTERL-H; short stature, microcephaly
Telomere Biology Diseases	>23	Lymphocyte telomere length	Nail dystrophy, dyskeratosis, leukoplakia, thin/gray hair
GATA2	*GATA2*	Low monocytes/B cells	Lymphedema (subset)
Diamond Blackfan Anemia	>20	Elevated Hgb F% and RBC ADA	VACTERL-H
Severe Congenital Neutropenia	>10 (*ELANE* most common)	ANC always < 200/μL	Variable
Shwachman Diamond Syndrome	>90% SBDS	Decreased pancreatic enzymes; metaphyseal dysplasia	Distinct facies, short stature, failure to thrive

PROGRESS TEST 2022 - QUESTION 27

27. A 16-month-old baby presents with easy bruising and frequent nose bleeding. Complete blood count and coagulation tests are normal. Light transmission aggregometry traces are given below. The blue curves represent the control sample, and the red curves are the patient sample.

Which of the following is the most likely diagnosis?

Please select the right answer.



There is no aggregation with ADP, adrenaline or collagen. Possible diagnoses include Glanzmann thrombasthenia and afibrinogenemia. The coagulation tests are normal, which excludes afibrinogenaemia.

Ref: Int J Lab Hem. 2018;40(Suppl. 1):34–45 Ref. for the image: http://www.practical-haemostasis.com/images/Images-2/Platelets/lta_gt_traces.jpg

- ✓ a) Glanzmann thrombasthenia
- b) Bernard Soulier syndrome
- c) May Hegglin anomaly
- d) von Willebrand's disease
- e) Gray platelet syndrome

Risk Category	Genetic Abnormality
Favorable	t (8;21) (q22;q22.1); *RUNX1-RUNX1T1* inv (16) (p13.1q22) or t (16;16) (p13.1;q22); *CBFB-MYH11* Mutated *NPM1* without *FLT3*-ITD bZIP in-frame mutated *CEBPA*
Intermediate	Mutated *NPM1* with *FLT3*-ITD Wild-type *NPM1* with *FLT3*-ITD t (9;11) (p21.3;q23.3); *MLLT3-KMT2A* Cytogenetic abnormalities not classified as favorable or adverse
Adverse	t (6;9) (p23;q34.1); *DEK-NUP214* t (v;11q23.3); *KMT2A rearranged* t (9;22) (q34.1;q11.2); *BCR-ABL1* inv(3) (q21.3q26.2) or t (3;3) (q21.3;q26.2); *GATA2, MECOM(EVI1)* t (3q26.2;v); *MECOM (EVI1)*-rearranged −5 or del (5q); −7; −17/abn (17p) Complex karyotype, monosomal karyotype Mutated *ASXL1*, *BCOR*, *EZH2*, *RUNX1*, *SF3B1*, *SRSF2*, *STAG2*, *U2AF1*, or *ZRSR2* Mutated *TP53*

Reprinted with permission from Ref. [6]. 2022, American Society of Hematology.

ELN 2022 Risk Stratification [6].

EUROPEAN HEMATOLOGY ASSOCIATION

European Hematology Exam 2023

Score per section of the European Hematology Curriculum

Selin Küçükyurt Kaya

To support you in planning your professional development, EHA would like to give you more details on your score per section of the European Hematology Curriculum. Cito, a professional knowledge institute in the field of testing and educational measurement, performed the psychometric analysis of the results. They calculated the cut-off score and translated this into a cut-off score per section. In the overview below you can see for each section whether you have scored above or below this cut-off score. This can help you identify aspects of the Curriculum where you can focus on personally.

On the EHA Exam website you can find recommendations on how to improve your knowledge on these topics.

	Section	Result
1.	Clinical hematology: Benign disorders	above
2.	Clinical hematology: Myeloid malignancies	above
3.	Clinical hematology: Lymphoid malignancies and plasma cell disorders	above
4.	Treatment of hematological disorders	above
5.	Laboratory diagnoses	above
6.	Thrombosis and hemostasis	above
7.	Transfusion medicine	above
8.	General skills	above

Disclaimer: These scores can only be considered an indication and cannot be considered separate parts of the exam. Therefore, it is not possible to give out a certificate per section. No correspondence will be entered into in respect of the result.

HEMATOPICS (EHA ONLY)

The European Hematology Exam: The Next Step toward the Harmonization of Hematology Training in Europe

Navarro, José-Tomás[1]; Birgegård, Gunnar[2]; Strivens, Janet[3]; Hollegien, Wietske W.G.[4]; van Hattem, Naomi[4]; Saris, Manon T.[4]; Wondergem, Marielle J.[5]; Toh, Cheng-Hock[6]; Almeida, Antonio M.[7]

Author Information

HemaSphere 3(5):e291, October 2019. | ***DOI:*** 10.1097/HS9.0000000000000291

- Klinik öyküsü olmayan sorular, spesifik bilgi hatırlama soruları seyrek olmalı
- Kılavuzlar, soru yazma süreci için önemli araçlar

List of Participants in the first 3 European Hematology Exams According to the Country of Origin

Country	2017	2018	2019	Total	%
Spain	21	9	41	71	24%
Turkey	5	6	18	29	10%
Switzerland	4	14	10	28	10%
Portugal	9	5	13	27	9%
Greece	4	4	12	20	7%
United Kingdom	3	7	7	17	6%
India	1	7	4	12	4%
Netherlands	4	1	5	10	3%
Germany	2	3	2	7	2%
Bulgaria	2	3	1	6	2%
Belgium		2	3	5	2%
Italy	1	1	2	4	1.4%
Saudi Arabia		1	3	4	1.4%
Sweden	1	2	1	4	1.4%
Ireland		1	2	3	1.0%
Mexico	2		1	3	1.0%
Qatar		1	2	3	1.0%
United States	1	2		3	1.0%
Argentina		1	1	2	0.7%
Austria			2	2	0.7%
Bahrain			2	2	0.7%
Brazil			2	2	0.7%
Croatia			2	2	0.7%
Estonia		2		2	0.7%
Poland		2		2	0.7%
Australia			1	1	0.3%
Belarus		1		1	0.3%
Bosnia and Herzegovina			1	1	0.3%
Egypt	1			1	0.3%
Finland			1	1	0.3%
France			1	1	0.3%
Hong Kong	1			1	0.3%
Indonesia		1		1	0.3%
Iraq			1	1	0.3%
Japan			1	1	0.3%
Jordan		1		1	0.3%
Kazakhstan			1	1	0.3%
Kuwait			1	1	0.3%
Luxembourg			1	1	0.3%
Nigeria		1		1	0.3%
Norway	1			1	0.3%
Pakistan			1	1	0.3%
Paraguay	1			1	0.3%
Romania			1	1	0.3%
Slovenia		1		1	0.3%
South Africa			1	1	0.3%
Sri Lanka			1	1	0.3%
United Arab Emirates		1		1	0.3%
Total	64	80	149	293	100%

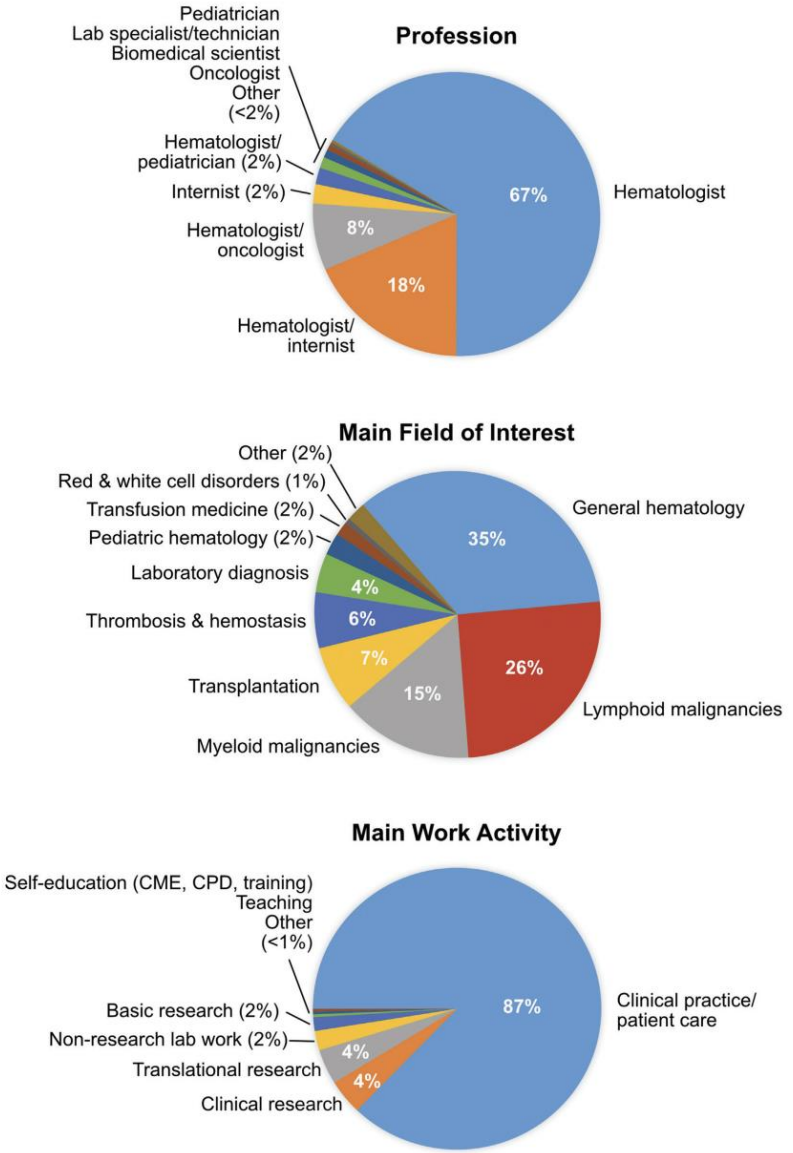


Figure 1. **(A) Profession, (B) main field of interest, and (C) main work activity of the participants in the first 3 iterations of the European Exam of Hematology.**

Figure 2. **The chart shows the main reasons for participating in the exam reported by the candidates.**

Açık uçlu, çoktan seçmeli test formatında sorular
Öncesinde deneme sınavları
Tecrübeli ekip (7. sınav)
Çıkmış soru olması (%10?)
Pratik sınav olmaması ?

Sorulara ve cevaplara ulaşılamaması
Doğru/Yanlış öğrenememe

EHA EUROPEAN HEMATOLOGY ASSOCIATION

Certificate

The European Hematology Association certifies that

Selin Küçükyurt Kaya

passed the European Hematology Exam held on June 8, 2023.

Antonio Almeida
President, EHA

Tomás Navarro
Chair, Curriculum-Exam Committee

July 2023

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