

SUMMARY STATISTICS

EQA round: NKDF2/17 - Bone Marrow Aspirate Film

Dead line (EQA round closed): 17.11.2017

Professional supervision: Czech Haematological Society
National Reference Laboratory for Haematology

Key:	>>>	... marks correct (expected) result
	>	... marks conditionally correct (acceptable) result

Patient A

Photo 1

Object no. 1	Nuclear cells - type of cells		1	Erythropoiesis: Basophilic erythroblast	2,2 %		
			1	Erythropoiesis: Polychromatophil erythroblast	2,2 %		
	Nuclear cells - morphology	>>>	44	Lymphocyte pop.: Lymphocyte	96 %		
			1	Granulopoiesis: Normal finding	2,2 %		
			2	Erythropoiesis: Normal finding	4,3 %		
		>>>	41	Lymphocyte pop.: Normal lymphocyte/plasmocyte	89 %		
Object no. 2	Nuclear cells - type of cells	>>>	46	Granulopoiesis: Neutrophil segment	100 %		
		Nuclear cells - morphology	>>>	32	Granulopoiesis: Normal finding	70 %	
			4	Granulopoiesis: Hypo-/agranularity	8,7 %		
			4	Granulopoiesis: Neutrophil disgranularity	8,7 %		
			3	Granulopoiesis: Cytoplasmatic vacuolisation	6,5 %		
	>		5	Granulopoiesis: Neutrophil hypersegmentation	11 %		
			1	Granulopoiesis: Döhle bodies	2,2 %		
		1	Erythropoiesis: Nucleocytoplasmatic asynchrony	2,2 %			
Object no. 3	Nuclear cells - type of cells	>>>	30	Granulopoiesis: Neutrophil bar	65 %		
		>	16	Granulopoiesis: Neutrophil segment	35 %		
	Nuclear cells - morphology		5	Granulopoiesis: Normal finding	11 %		
			3	Granulopoiesis: Hypo-/agranularity	6,5 %		
			3	Granulopoiesis: Hypergranularity/toxic granulation	6,5 %		
			6	Granulopoiesis: Neutrophil disgranularity	13 %		
			8	Granulopoiesis: Cytoplasmatic vacuolisation	17 %		
			1	Granulopoiesis: Megalostabs and megalometamyelocytes	2,2 %		
			4	Granulopoiesis: Neutrophil and eosinophil hyposegmentation and acquired Pelger-Huët anomaly	8,7 %		
		>>>	42	Granulopoiesis: Döhle bodies	91 %		
		Object no. 4	Nuclear cells - type of cells	>>>	44	Granulopoiesis: Mastocyte	96 %
					1	Other cells: Macrophage	2,2 %
	1			Other cells: Nonhaematopoetic malignant cell	2,2 %		
Object no. 5	Nuclear cells - type of cells		12	Erythropoiesis: Polychromatophil erythroblast	26 %		
		>>>	33	Erythropoiesis: Orthochromatic erythroblast	72 %		
			1	Megakaryopoiesis: Promegakaryocyte	2,2 %		
	Nuclear cells - morphology		2	Granulopoiesis: Normal finding	4,3 %		
			1	Granulopoiesis: Nucleocytoplasmatic asynchrony	2,2 %		
		>>>	36	Erythropoiesis: Normal finding	78 %		
			5	Erythropoiesis: Disturbance of cytoplasmatic haemoglobinisation	11 %		
			2	Erythropoiesis: Nucleocytoplasmatic asynchrony	4,3 %		
			1	Erythropoiesis: Macroerythroblast	2,2 %		

Photo 2

Object no. 1	Nuclear cells - type of cells	>>>	44	Granulopoiesis: Mastocyte	96 %
			1	Other cells: Macrophage	2,2 %
			1	Other cells: Nonhaematopoetic malignant cell	2,2 %
Object no. 2	Nuclear cells - type of cells		10	Erythropoiesis: Polychromatophil erythroblast	22 %
		>>>	36	Erythropoiesis: Orthochromatic erythroblast	78 %
	Nuclear cells - morphology		1	Granulopoiesis: Nucleocytoplasmatic asynchrony	2,2 %
		>	28	Erythropoiesis: Normal finding	61 %
		>	6	Erythropoiesis: Disturbance of cytoplasmatic haemoglobinisation	13 %
		>>>	12	Erythropoiesis: Nucleocytoplasmatic asynchrony	26 %

Patient A

Photo 2

Object no. 3	Nuclear cells - type of cells		6	Granulopoiesis: Eosinophil stab	13 %
		>>>	40	Granulopoiesis: Eosinophil segment	87 %
	Nuclear cells - morphology	>>>	38	Granulopoiesis: Normal finding	83 %
			1	Granulopoiesis: Hypo-/agranularity	2,2 %
		>	5	Granulopoiesis: Cytoplasmatic vacuolisation	11 %
			1	Granulopoiesis: Eosinophil hypersegmentation	2,2 %
			2	Granulopoiesis: Neutrophil and eosinophil hyposegmentation and acquired Pelger-Huët anomaly	4,3 %
Object no. 4	Nuclear cells - type of cells		1	Granulopoiesis: Myeloblast	2,2 %
			7	Granulopoiesis: Promyelocyte	15 %
	Nuclear cells - morphology	>>>	35	Granulopoiesis: Neutrophil myelocyte	76 %
			3	Granulopoiesis: Neutrophil metamyelocyte	6,5 %
		>>>	30	Granulopoiesis: Normal finding	65 %
			1	Granulopoiesis: Hypo-/agranularity	2,2 %
		>	10	Granulopoiesis: Hypergranularity/toxic granulation	22 %
			4	Granulopoiesis: Neutrophil disgranularity	8,7 %
			3	Granulopoiesis: Nucleocytoplasmatic asynchrony	6,5 %
		Object no. 5	Nuclear cells - type of cells	>>>	46
Nuclear cells - morphology	>>>		32	Granulopoiesis: Normal finding	70 %
			2	Granulopoiesis: Hypo-/agranularity	4,3 %
			1	Granulopoiesis: Hypergranularity/toxic granulation	2,2 %
			3	Granulopoiesis: Neutrophil disgranularity	6,5 %
			2	Granulopoiesis: Cytoplasmatic vacuolisation	4,3 %
			1	Granulopoiesis: Nucleocytoplasmatic asynchrony	2,2 %
>	4	Granulopoiesis: Neutrophil hypersegmentation	8,7 %		
	1	Erythropoiesis: Normal finding	2,2 %		

General view and diagnosis

Cellularity	>>>	40	Normocellular	87 %
		1	Hypercellular	2,2 %
	>	5	Hypocellular	11 %
Granulopoiesis - count	>>>	37	Within physiological limits	80 %
		8	Increased	17 %
	>	1	Decreased	2,2 %
Erythropoiesis - count	>>>	43	Within physiological limits	93 %
		3	Decreased	6,5 %
Erythropoiesis - morphology	>>>	25	No significant changes	54 %
	>	11	Dysplastic erythropoiesis	24 %
		1	Megaloblastic erythropoiesis	2,2 %
		8	Macroerythroblastic erythropoiesis	17 %
	>	1	Atypical erythropoiesis	2,2 %
Lymphopoiesis - count	>>>	43	Within physiological limits	93 %
		1	Increased	2,2 %
		2	Decreased	4,3 %
Lymphopoiesis - morphology	>>>	44	No significant changes	96 %
		2	Reactive changes/irritations	4,3 %
Monocytopoiesis - count	>>>	40	Within physiological limits	87 %
		6	Decreased	13 %
Monocytopoiesis - morphology	>>>	46	No significant changes	100 %
Estimation of diagnosis		1	Metastatic impairment of bone marrow	2,2 %
	>>>	45	Mastocytosis	98 %

Patient B

Photo 1

Object no. 1	Nuclear cells - type of cells	>>>	46	Erythropoiesis: Orthochromatic erythroblast	100 %
		Nuclear cells - morphology		3	Granulopoiesis: Normal finding
			1	Granulopoiesis: Nucleocytoplasmatic asynchrony	2,2 %
	>>>		30	Erythropoiesis: Normal finding	65 %
	>		5	Erythropoiesis: Pycnosis of nucleus	11 %
	>		9	Erythropoiesis: Disturbance of cytoplasmatic haemoglobinisation	20 %
	1	Erythropoiesis: Cytoplasmatic vacuolisation	2,2 %		
	1	Erythropoiesis: Nucleocytoplasmatic asynchrony	2,2 %		
Object no. 2	Nuclear cells - type of cells	>>>	45	Lymphocyte pop.: Lymphocyte	98 %
			1	Monocyte pop.: Monocyte	2,2 %

Patient B

Photo 1

Object no. 2	Nuclear cells - morphology	>>>	45	Lymphocyte pop.: Pathological lymphocyte	98 %	
			1	Monocyte pop: Normal finding	2,2 %	
Object no. 3	Nuclear cells - type of cells	>>>	46	Other cells: Bare nuclei / smudge cell	100 %	
Object no. 4	Nuclear cells - type of cells	>>>	1	Granulopoiesis: Myeloblast	2,2 %	
			36	Granulopoiesis: Neutrophil myelocyte	78 %	
			8	Granulopoiesis: Neutrophil metamyelocyte	17 %	
			1	Lymphocyte pop.: LGL (large granular lymphocyte)	2,2 %	
			30	Granulopoiesis: Normal finding	65 %	
			1	Granulopoiesis: Hypo-/agranularity	2,2 %	
			>	6	Granulopoiesis: Hypergranularity/toxic granulation	13 %
			7	Granulopoiesis: Neutrophil disgranularity	15 %	
			2	Granulopoiesis: Nucleocytoplasmatic asynchrony	4,3 %	
			1	Granulopoiesis: Döhle bodies	2,2 %	
			1	Lymphocyte pop.: Pathological lymphocyte	2,2 %	

Photo 2

Object no. 1	Nuclear cells - type of cells	>>>	45	Lymphocyte pop.: Lymphocyte	98 %			
			1	Monocyte pop: Monocyte	2,2 %			
	Nuclear cells - morphology	>>>	45	Lymphocyte pop.: Pathological lymphocyte	98 %			
			1	Monocyte pop: Normal finding	2,2 %			
Object no. 2	Nuclear cells - type of cells	>>>	8	Granulopoiesis: Neutrophil bar	17 %			
			38	Granulopoiesis: Neutrophil segment	83 %			
			20	Granulopoiesis: Normal finding	43 %			
			>	14	Granulopoiesis: Hypo-/agranularity	30 %		
			2	Granulopoiesis: Cytoplasmatic vacuolisation	4,3 %			
			12	Granulopoiesis: Neutrophil and eosinophil hyposegmentation and acquired Pelger-Huët anomaly	26 %			
Object no. 3	Nuclear cells - type of cells	>>>	1	Lymphocyte pop.: Pathological lymphocyte	2,2 %			
			45	Granulopoiesis: Neutrophil bar	98 %			
			1	Granulopoiesis: Basophil stab	2,2 %			
			24	Granulopoiesis: Normal finding	52 %			
			6	Granulopoiesis: Hypo-/agranularity	13 %			
			1	Granulopoiesis: Neutrophil disgranularity	2,2 %			
			3	Granulopoiesis: Megalostabs and megalometamyelocytes	6,5 %			
			1	Granulopoiesis: Neutrophil and eosinophil hyposegmentation and acquired Pelger-Huët anomaly	2,2 %			
			15	Granulopoiesis: Döhle bodies	33 %			
			Object no. 4	Nuclear cells - type of cells	>>>	2	Granulopoiesis: Myeloblast	4,3 %
						1	Granulopoiesis: Promyelocyte	2,2 %
42	Granulopoiesis: Neutrophil myelocyte	91 %						
1	Lymphocyte pop.: LGL (large granular lymphocyte)	2,2 %						
>	18	Granulopoiesis: Normal finding				39 %		
2	Granulopoiesis: Hypo-/agranularity	4,3 %						
1	Granulopoiesis: Hypergranularity/toxic granulation	2,2 %						
>>>	16	Granulopoiesis: Neutrophil disgranularity				35 %		
>>>	14	Granulopoiesis: Nucleocytoplasmatic asynchrony				30 %		
1	Granulopoiesis: Neutrophil and eosinophil hyposegmentation and acquired Pelger-Huët anomaly	2,2 %						
3	Granulopoiesis: Döhle bodies	6,5 %						
1	Lymphocyte pop.: Pathological lymphocyte	2,2 %						

General view and diagnosis

Cellularity	>>>	46	Hypocellular	100 %	
Granulopoiesis - count	>>>	1	Within physiological limits	2,2 %	
		1	Increased	2,2 %	
		44	Decreased	96 %	
Granulopoiesis - morphology	>>>	34	No significant changes	74 %	
		11	Dysplastic granulopoiesis	24 %	
		1	Atypical/toxic granulopoiesis	2,2 %	
Erythropoiesis - count	>>>	35	Within physiological limits	76 %	
		11	Decreased	24 %	
Erythropoiesis - morphology	>>>	1	Microerythroblastic erythropoiesis	2,2 %	
		30	No significant changes	65 %	
		>	10	Dysplastic erythropoiesis	22 %
		5	Atypical erythropoiesis	11 %	

Patient B

General view and diagnosis

Lymphopoiesis - count		2	Within physiological limits	4,3 %
	>>>	43	Increased	93 %
		1	Decreased	2,2 %
Lymphopoiesis - morphology		1	No significant changes	2,2 %
	>>>	45	Pathological lymphopoiesis	98 %
Monocytopoiesis - count	>>>	30	Within physiological limits	65 %
	>	15	Decreased	33 %
Monocytopoiesis - morphology	>>>	42	No significant changes	91 %
		1	Pathological monocytopoiesis	2,2 %
Estimation of diagnosis		1	Myelodysplastic syndrome (unclassifiable)	2,2 %
	>>>	45	HCL (hairy cell leukaemia)	98 %

Evaluation of the results - scoring system

NKDF2/17

Patient A	Photo A1	Photo A2	General view
Maximal achievable score:	56	56	20
Successful participants (success 60 % and more):	40 (it is 87 %)	38 (it is 83 %)	43 (it is 93 %)
Minimal success in this round:	25,0 %	25,0 %	20,0 %
Maximal success in this round:	100,0 %	100,0 %	100,0 %
Patient B	Photo B1	Photo B2	General view
Maximal achievable score:	44	52	22
Successful participants (success 60 % and more):	43 (it is 93 %)	37 (it is 80 %)	42 (it is 91 %)
Minimal success in this round:	50,0 %	15,4 %	31,8 %
Maximal success in this round:	100,0 %	100,0 %	100,0 %
Number of participants: 46			
Number of participants that succeeded:	in all 6 tests: 28 (it is 61 %)		
	in 5 tests: 10 (it is 22 %)		
	in 4 tests: 3 (it is 7 %)		
	in 3 tests: 3 (it is 7 %)		
	in 2 tests: 2 (it is 4 %)		
	in 1 test: 0 (it is 0 %)		
	in no test: 0 (it is 0 %)		