SEKK

SUMMARY STATISTICS

EQA round: DIF1/20 - Peripheral Blood Morphology Evaluation

Deadline (EQA round closed): 19.03.2020

Key:
ELG ... expert laboratories group
AV, >>> ... assigned value type CVE (consensus of ELG)
RAR ... range of acceptable results
RoM ... robust average of all results
> ... possible result (found by ELG, but consensus not reached)

WBC - differential count

	Sample A AV	Sample A RAR	Sample A RoM	Sample B AV	Sample B RAR	Sample B RoM
Blasts	0,006	0,000 - 0,028	0,006	0	0,000 - 0,018	0,000
Promyelocytes	0,006	0,000 - 0,028	0,011	0	0,000 - 0,018	0,000
Neutrophil myelocytes	0,051	0,024 - 0,090	0,052	0	0,000 - 0,018	0,000
Neutrophil metamyelocytes	0,042	0,021 - 0,084	0,038	0	0,000 - 0,018	0,000
Neutrophil bars	0,068	0,039 - 0,115	0,076	0,006	0,000 - 0,028	0,008
Segmented neutrophil granulocytes	0,582	0,508 - 0,649	0,588	0,594	0,523 - 0,664	0,582
Eosinophils - immature forms	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Eosinophil segmented granulocytes	0,007	0,000 - 0,028	0,009	0,009	0,001 - 0,036	0,012
Basophilic granulocytes	0,011	0,001 - 0,036	0,011	0,006	0,000 - 0,028	0,005
Monocytes	0,017	0,003 - 0,043	0,016	0,035	0,014 - 0,071	0,036
Lymphocytes	0,193	0,142 - 0,257	0,187	0,351	0,284 - 0,420	0,354
Plasma cells	0,004	0,000 - 0,028	0,001	0	0,000 - 0,018	0,000
Erythroblasts (number)	1,000	0,000 - 3,000	0,732	0	0,000 - 3,000	0,308

WBC - morphology

Sample A			Sample B		
3	No changes	2,3 %	>>> 83	No changes	62 %
>>> 111	Hypergranulation/toxic granulation	83 %	16	Agranulation	12 %
16	Giant bands and metamyelocytes	12 %	4	Hypersegmented granulocytes	3,0 %
22	Hypersegmented granulocytes	17 %	1	Hyposegmentation / asegmentation / pelgeroid	0,8 %
3	Hyposegmentation / asegmentation / pelgeroid	2,3 %	1	Atypical/reactive monocytes	0,8 %
6	Döhle bodies	4,5 %	6	Denuded nuclei/cells, nuclear shadows / smudge cells	4,5 %
1	Atypical/reactive monocytes	0,8 %	1	Vacuolisation	0,8 %
> 49	Denuded nuclei/cells, nuclear shadows / smudge cells	37 %	17	LGL/big lymphocytes	13 %
> 73	Vacuolisation	55 %	15	Lymphocytes - reactive forms	11 %
10	Lymphocytes - reactive forms	7,5 %	4	Lymphocytes - atypical forms (except "hairy")	3,0 %
12	Lymphocytes - atypical forms (except "hairy")	9,0 %			
11	Nucleus fragments of neutrophiles	8,3 %			

WBC - relative changes of count

Sample A			Sample B		
2	Normal count	1,5 %	>>> 115	Normal count	86 %
>>> 74	Neutrophilia	56 %	1	Neutrophilia	0,8 %
>>> 73	Lymphocytopenia	55 %	1	Lymphocytosis	0,8 %
1	Eosinophilia	0,8 %	3	Basophilia	2,3 %
> 27	Basophilia	20 %	1	Monocytosis	0,8 %
2	Monocytosis	1,5 %	11	Monocytopenia	8,3 %
> 47	Monocytopenia	35 %	2	Left shift	1,5 %
>>> 127	Left shift	95 %			

RBC - morphology

Sample A			Sample B		
3	Normocytosis	2,3 %	>>> 117	Microcytosis	88 %
>>> 85	Microcytosis	64 %	3	Macrocytosis	2,3 %
2	Macrocytosis	1,5 %	>>> 127	Anisocytosis	95 %
>>> 124	Anisocytosis	93 %	>>> 85	Poikilocytosis	64 %
> 41	Poikilocytosis	31 %	>>> 67	Eliptocytes, ovalocytes	50 %
>>> 98	Eliptocytes, ovalocytes	74 %	> 30	Spherocytes	23 %
> 26	Spherocytes	20 %	35	Stomatocytes	26 %
2	Stomatocytes	1,5 %	4	Drepanocytes	3,0 %
>>> 109	Dacryocytes	82 %	>>> 63	Dacryocytes	47 %
5	Target cells	3,8 %	2	Acanthocytes	1,5 %
>>> 50	Schistocytes (and other fragmentocytes)	38 %	>>> 117	Target cells	88 %
>>> 69	Polychromasia	52 %	>>> 78	Schistocytes (and other fragmentocytes)	59 %
>>> 66	Hypochromia	50 %	>>> 84	Polychromasia	63 %

DIF1/20 - Peripheral Blood Morphology Evaluation

	Sample A			Sample B	
RBC - morphology					
15	Basophilic stippling	11 %	>>> 126	Hypochromia	95 %
5	Howell-Jolly bodies	3,8 %	>>> 115	Basophilic stippling	86 %
4	Cabot rings	3,0 %	9	Howell-Jolly bodies	6,8 %
2	Rouleaux formation	1,5 %	2	Cabot rings	1,5 %
2	Pappenheimer bodies	1,5 %	2	Rouleaux formation	1,5 %
			6	Pappenheimer bodies	4,5 %
Platelets - morphology					
9	No changes	6,8 %	> 89	No changes	67 %
>>> 120	Large platelets	90 %	> 42	Large platelets	32 %
15	Small platelets	11 %	11	Small platelets	8,3 %
3	Platelet aggregates	2,3 %	2	Platelets hypogranulation	1,5 %
> 38	Platelets hypogranulation	29 %			
7	Megakaryocytic nucleus fragments	5,3 %			
Clinical recommendation - smear					
>>> 132	Blood smear is pathological	99 %	>>> 126	Blood smear is pathological	95 %
			6	Blood smear within physiological limits or with reactive changes	4,5 %
Clinical recommendation - examination					
>>> 132	An examination by the specialist/haematologist is recommended	99 %	>>> 126	An examination by the specialist/haematologist is recommended	95 %
			5	An examination by the specialist/haematologist is not necessary	3,8 %
Diagnosis - anaemia					
3	Exact determination impossible	2,3 %	9	Exact determination impossible	6,8 %
4	Normocytosis	3,0 %	18	Microcytosis	14 %
1	Microcytosis	0,8 %	9	Hypochromia	6,8 %
3	Hypochromia	2,3 %	1	Haemolytic	0,8 %
			>>> 115	Thalassemia or other haemoglobinopathies	86 %
Diagnosis - acute leukaemia					
2	Without closer determination	1,5 %			
1	AML (acute myeloid leukemia)	0,8 %			
Diagnosis - myelodysplastic syndrome					
3	Myelodysplastic syndrome	2,3 %			
Diagnosis - chronic myeloproliferative disease					
> 50	Exact determination impossible	38 %			
14	CML (chronic myelogenous leukaemia)	11 %			
> 20	Polycythemia vera	15 %			
> 63	Myelofibrosis	47 %			
Diagnosis - other					
2	Other reactive changes	1,5 %	1	Viral infection incl. inf. mononucleosis	0,8 %
Smear quality					
120	Acceptable	90 %	121	Acceptable	91 %
10	Not acceptable (give a reason)	7,5 %	8	Not acceptable (give a reason)	6,0 %
Staining					
107	Acceptable	80 %	105	Acceptable	79 %
24	Not acceptable (give a reason)	18 %	24	Not acceptable (give a reason)	18 %

Evaluation of the results - scoring system DIF1/20

Sample A	Sample B
Maximal achievable score: 123	**Maximal achievable score: 123**
Successful participants (success 60 % and more): 121 (it is 91 %)	Successful participants (success 60 % and more): 126 (it is 95 %)
Minimal success in this round: 32,5 %	Minimal success in this round: 34,1 %
Maximal success in this round: 100,0 %	Maximal success in this round: 100,0 %

Number of participants: 133

Number of participants that succeeded:
- in both samples: 115 (it is 86 %)
- in one sample: 17 (it is 13 %)
- in no sample: 1 (it is 1 %)