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| **case 1** |  | **case 2** |
| **Blood picture + bioch** | **Normal values** | **Blood picture + bioch** |
| Leu: **2,56** ] | [4,00..10,00] | Leu: 6,87 |
| Ery: 1,85 | [4,00..5,80] | **Ery: 4,53** |
| HB: **78** | [135..175] | **HB: 97** |
| HTC: 0,226 | [0,400..0,500] | HTC: 0,344 |
| **MCV: 122,2** | [82,0..98,0 | **MCV: 75,9** |
| MCH: 42,2 | [28,0..34,0] | **MCH: 21,4** |
| MCHC: 345 | [320..360] | **MCHC: 282** |
| **RDW: 15,9** | [10,0..15,2] | **RDW: 22,5** |
| Plt: **107** | [150..400] | Plt: 373 |
| **Differential count relative** |  | **Differential count relative** |
| Ne: 59,8 | [45,0..70,0] | Ne: 70,6 |
| Ly: 32,0 | [20,0..45,0] | Ly: 18,5 |
| Mo: 4,3 | [2,0..12,0] | Mo: 8,3 |
| Eo: 3,5 | [0,0..5,0] | Eo: 2,3 |
| Ba: 0,4 | [0,0..2,0] | Ba: 0,3 |
| **Differential count absol.** |  | **Differential count absol.** |
| Ne abs.: **1,53** | [2,00..7,00] | Ne abs.: 4,85 |
| Ly abs.: 0,82 | [0,80..4,00] | Ly abs.: 1,27 |
| Mo abs.: 0,11 | [0,80..4,00] | Mo abs.: 0,57 |
| Eo abs.: 0,09 | [0,00..0,50 | Eo abs.: 0,16 |
| Ba abs.: 0,01 | [0,00..0,20] | Ba abs.: 0,02 |
| **Dif. count manual (microscope):** |  |  |
| Anisocytosis: +++ | 6,6-28 |  |
| Makrocytes: +++ | 40,8- 76,6 |  |
| Poikilocytes: + |  |  |
| Rtc abs. **0,022** [0,025..0,100] |  |  |
| **Biochemistry + iron metab** |  | **Iron metabolism** |
| Fe: 19,7 | [7,2..29,0] | Fe: 2,3 |
| Transferrin: **1,88** | [2,00..3,60 | Transferrin: **3,92** |
| Satur. trf: 46,1 | [19,0..49,0] | Satur. trf: **3,0** |
| Ferritin: 99,3 | [22,0..322,0] | Ferritin**: 6,6** |
| Vitamin B12: **45**  [145..569] | [1,1 – 4,1] | Solub. trnsf.receptor: **12,9** |
| Folinic acid 8,5 [3,9..26,8] |  |  |
| Haptoglobin: 0,30 [0,30..2,00] |  |  |
|  | [40-76,6] | TIBC: **80,4** |
| LD: 5,2 | [2,2..3,8] |  |
|  |  |  |
| Direct coombs test: negat |  |  |

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| **case 1** | **case 2** |
| Hypoproliferative anaemia: severe avitaminosis B 12 – **makrocytic anaemia**, leuko and thrombocytopenia | Hypoproliferative anaemia: IDA, **Iron deficiency anaemia** |

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| **case 3** |  | **case 4** |
| **Blood picture** | **Normal values** | **Blood picture + bioch**: |
| **Leu: 205,79** | [4,00..10,00] | Leu: 6,45 |
| Ery: 4,16 | [4,00..5,80] | Ery: 3,29 |
| **HB: 107** | [135..175] | **HB: 105** |
| HTC: 0,376 | [0,400..0,500] | HTC: 0,301 |
| MCV: 90,4 | [82,0..98,0 | MCV: 91,5 |
| MCH: 25,7 | [28,0..34,0] | MCH: 31,9 |
| MCHC: 285 | [320..360] | MCHC: 349 |
| RDW: 20,4 | [10,0..15,2] | **RDW: 15,8** |
| **Plt: 112** | [150..400] | Plt: 172 |
| Differential count relative |  | Differential count relative |
| Ne: 2,3 | [45,0..70,0] | Ne: 68,0 |
| **Ly: 95,5** | [20,0..45,0] | Ly: 21,2 |
| Mo: 1,8 | [2,0..12,0] | Mo: 7,6 |
| Eo: 0,1 | [0,0..5,0] | Eo: 2,9 |
| Ba: 0,3 | [0,0..2,0] | Ba: 0,3 |
| Differential count absol. |  | Differential count absol. |
| Ne abs.: 4,61 | [2,00..7,00] | Ne abs.: 4,38 |
| **Ly abs.: 196,55** | [0,80..4,00] | Ly abs.: 1,37 |
| Mo abs.: 3,77 | [0,80..4,00] | Mo abs.: 0,49 |
| Eo abs.: 0,27 | [0,00..0,50 | Eo abs.: 0,19 |
| Ba abs.: 0,59 | [0,00..0,20] | Ba abs.: 0,02 |
| **microscope:** |  | Other |
| **Gumprecht's shadows: 31** | [1,0-15,0 **‰** ] | **Rtc (**[**thousandth**](https://slovnik.seznam.cz/preklad/anglicky_cesky/thousandth?strict=true)**): 48 ‰** |
| **or: smudge cells** | [0,025..0,100] | **Rtc abs.: 0,157** |
|  |  | Liver tests |
|  | [2,0..17,0] | **Bilirubin: 54,7** |
|  | [0,0..5,1] | **Bili dir.: 16,5** |
|  |  | ALT: 0,47 |
|  |  | AST: 0,50 |
|  |  | GGT: 0,43 |
|  |  | ALP: 1,82 |
|  |  | Enzymes: |
|  | [2,2..3,8] | **LD: 5,9** |
|  |  | Proteins: |
|  | [0,30..2,00] | **Haptoglobin: <0,06** |

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| **case 3** | **case 4** |
| CLL, Rai 2, slight anaemia, and slight thrombocytopenia | Haemolytic anaemia (Hb, rtc, bili, hapto, LD) |

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| **21.03.2022** | **interim case 1** | **24.03.2022** |
| **Blood picture** | **Normal values** | **Blood picture** |
| **Leu: 2,29** | [4,00..10,00] | **Leu: 5,42** |
| Ery: 4,27 | [4,00..5,80] | Ery: 3,95 |
| **HB: 123** | [135..175] | **HB: 112** |
| HTC: 0,375 | [0,400..0,500] | HTC: 0,347 |
| MCV: 87,8 | [82,0..98,0 | MCV: 87,8 |
| MCH: 28,8 | [28,0..34,0] | MCH: 28,4 |
| MCHC: 328 | [320..360] | MCHC: 323 |
| RDW: 13,2 | [10,0..15,2] | RDW: 13,1 |
| **Plt: 112** | [150..400] | **Plt: 160** |
| **Differential count - % relative** |  |  |
| Ne: 65,0 | [45,0..70,0] | Ne: 60,9 |
| Ly: 23,6 | [20,0..45,0] | Ly: 23,6 |
| Mo: 9,2 | [2,0..12,0] | Mo: 11,8 |
| Eo: 1,3 | [0,0..5,0] | Eo: 3,3 |
| Ba: 0,9 | [0,0..2,0] | Ba: 0,4 |
| Differential count **absol**. |  |  |
| **Ne abs.: 1,49** | [2,00..7,00] | **Ne abs.: 3,30** |
| Ly abs.: 0,54 | [0,80..4,00] | Ly abs.: 1,28 |
| Mo abs.: 0,21 | [0,80..4,00] | **Mo abs.: 0,64** |
| Eo abs.: 0,03 | [0,00..0,50 | **Eo abs.: 0,18** |
| Ba abs.: 0,02 | [0,00..0,20] | Ba abs.: 0,02 |
| **Diff. manual % - microscope** |  |  |
| Neu seg 59,0 | [47,0..70,0] |  |
| **Neu Band 19,0** | [0,0..4,0] | **Neu Band : 5,0** |
| Lympho: 14,9 | [20,0..45,0] |  |
| Mo: 5,1 | [2,0..10,0] |  |
| Eo: 0,5 | [0,0..5,0] |  |
| Ba: 1,5 | [0,0..1,0] |  |
| **Myelocytes (MC) 0,5** |  |  |
| **Proteins** |  | **Proteins** |
| CRP: 149,8 | [0,0..5,0] | **CRP: 27,8** |

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| **interim Case 1** |
| **Bacterial pneumonia**  1st examin: leukopenia, left shift (Bands, MC), high CRP  2nd exam after 4 days: normalization CRP, bands…. |

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| **case 5** |  | **case 6** |
| **Blood picture + bioch** | **Normal values** | **Blood picture** |
| Leu: 6,10 | [4,00..10,00] | **Leu: 88,03** |
| Ery: 4,25 | [4,00..5,80] | Ery: 5,13 |
| HB: **113** | [135..175] | HB: 146 |
| HTC: **0,345** | [0,400..0,500] | HTC: 0,44 |
| MCV: **81,2** | [82,0..98,0 | MCV: 85,8 |
| MCH: **26,6** | [28,0..34,0] | MCH: 28,5 |
| MCHC: 328 | [320..360] | MCHC: 332 |
| RDW: **16,7** | [10,0..15,2] | RDW: 15 |
| Plt: 236 | [150..400] | **Plt: 98** |
| Differential count relative |  | MPV: 10 |
| Ne: 46,0 |  | PCT: 0,1 |
| Ly: 42,0 |  | PDW: 11,3 |
| Mo: 7,9 |  | Differential count relative |
| Eo: 3,8 | [45,0..70,0] | Ne: 3,2 |
| Ba: 0,3 | [20,0..45,0] | **Ly: 86,8** |
| **Minerals** | [2,0..12,0] | Mo: 9,7 |
| TIBC: **80,1** | [0,0..5,0] | Eo: 0,1 |
| Fe-saturation 0,12 | [0,0..2,0] | Ba: 0,2 |
| **Proteins:** |  | Differential count absol. |
| Transferrin: **3,98** [2,00..3,60] | [2,00..7,00] | Ne abs.: 2,72 |
| Trf saturation: **10,5** [19,0..49,0] | [0,80..4,00] | **Ly abs.: 76,44** |
| Ferritin: **6,9** [10,0..291,0] | [0,80..4,00] | Mo abs.: 8,56 |
|  | [0,00..0,50 | Eo abs.: 0,11 |
|  | [0,00..0,20] | **Gumprecht's shadows: 31** |
|  |  | **or: smudge cells** |

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| **case 5** | **case 6** |
| Iron deficiency anaemia (microcytic, hypochromic, sideropenic) | CLL Rai, clinical stage IV (thrombocytopenia) |

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| **Interim Case 2** | | |
| ESR FW/1hod: **>120** | **Normal values** | **Proteins:** |
| **Blood picture (CBC)**: |  | Albumin: 37,9 |
| Leu: 8,86 | [4,00..10,00] | **T**otal **P**rotein **:** **106,8** [65,0...85,0] |
| Ery: 4,26 | [4,00..5,80] | IgG: **5,1** |
| **HB: 133** | [135..175] | **IgA: 58,90** |
| HTC: 0,402 | [0,400..0,500] | **FKAP: 87,19** [3,30..19,40] |
| MCV: 94,4 | [82,0..98,0 | FLAM: 6,39 [5,71..26,30] |
| MCH: 31,2 | [28,0..34,0] | **index** FKAP/FLAM: **13,64** [0,26..1,65] |
| MCHC: 331 | [320..360] | **IEP :** paraprotein **IgA kappa.** |
| RDW: **16,1** | [10,0..15,2] | **(EP** - Protein electrophoresis): |
| Plt: 394 | [150..400] | **M-G%: 45,8** |
| **Differential count relative** |  | Alb.%: **34,30** |
| Ne: 47,3 | [45,0..70,0] | A1G%: **2,20** |
| Ly: **46,2** | [20,0..45,0] | A2G%: 8,50 |
| Mo: 5,5 | [2,0..12,0] | B1G%: **3,40** |
| Eo: 0,7 | [0,0..5,0] | B2G%: 4,80 |
| Ba: 0,3 | [0,0..2,0] | GG%: **46,80** |
| **Differential count absol.:** |  | **M-G: 48,91 g/**l [0,0 – 0,1 ] |
| Ne abs.: 4,19 | [2,0..12,0] | Alb.: 36,6 [35,2 – 50,4] |
| Ly abs.: **4,09** | [0,0..5,0] | A1G: 2,35 [1,3..3,9] |
| Mo abs.: 0,49 | [0,0..2,0] | A2G: 9,1 |
| Eo abs.: 0,06 | [2,00..7,00] | A2G%: 8,50 |
| Ba abs.: 0,03 | [0,80..4,00] | B1G: 3,63 |
| **Diff. count - microscope**: |  | B2G: 5,1 |
| SEG: 51,5 |  | GG: **49,98** [5,80..15,20] |
| Ly: 42,0 |  | A/G: 0,522 |
| Mo: 5,5 |  | **Blood - tumour markers**: |
| Ba: 1,0 |  | Beta-2-micro: **7,25** [1,0 – 2,40] |
| **Roulleaux ery: +++** |  | **Liver tests** |
| **Minerals + Osmolality:** |  | Bilirubin: 8,6 |
| Na: **135** | [137…146] | ALT: 0,25 [0,10..0,78] |
| K: 4,9 | [3,8…5,0] | AST: **0,95** [0,10..0,72] |
| Cl: **96** | [97..108] | GGT: **1,88** [0,14..0,68] |
| Ca: **2,78** | [2,0..2,75] | ALP: **3,06** [0,58..1,,73] |
| P: 1,17 | [065..1,61] |  |
| **Nitrogen catabolites***:* |  | Enzymes: |
| Urea: 4,8 | [2,0..6,7] | LD: 2,5 [2,20..3,80] |
| Creatinine.: 95 | [44..104] |  |
| Uric acid.: **449** | [140..340] |  |
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| **Interim case 2** |
| Multiple myeloma IgA kappa, A; anaemia, thrombocytopenia; hyperproteinaemia, coagulopathy, susp osteolytic lesions ( ALP, Ca) – skeletal CT scan needed |

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| **case 7** |  | **case 8** |
| **Blood picture** | **Normal values** | **Blood picture** |
| **Leu: 0,95** | [4,00..10,00] | **Leu: 163,08** |
| Ery: 4,16 | [4,00..5,80] | Ery: 4,24 |
| **HB: 115** | [135..175] | **HB: 111** |
| HTC: 0,345 | [0,400..0,500] | HTC: 0,354 |
| MCV: 83,1 | [82,0..98,0 | MCV: 83,5 |
| MCH: 27,7 | [28,0..34,0] | MCH: 26,3 |
| MCHC: 333 | [320..360] | MCHC: 315 |
| RDW: 18,7 | [10,0..15,2] | RDW: 15,7 |
| **Plt: 54** | [150..400] | **Plt: 51** |
| MPV: 8,1 |  | MPV: 7,7 |
| PCT: 0,043 |  | PCT: 0,039 |
| PDW: 18,8 |  | PDW: 19,9 |
| Differential count relative |  | Differential count relative |
| Ne: 21,8 | [45,0..70,0] | Ne: 7,3 |
| Ly: 60,3 | [20,0..45,0] | Ly: 8,8 |
| Mo: 17,0 | [2,0..12,0] | **Mo: 83,1** |
| Eo: 0,2 | [0,0..5,0] | Eo: 0,8 |
| Ba: 0,7 | [0,0..2,0] | Ba: 0,0 |
| Differential count absol. |  | Differential count absol. |
| **Ne abs.: 0,21** | [2,00..7,00] | Ne abs.: 11,90 |
| Ly abs.: 0,57 | [0,80..4,00] | Ly abs.: 14,30 |
| Mo abs.: 0,16 | [0,80..4,00] | **Mo abs.: 135,6** |
| Eo abs.: 0,00 | [0,00..0,50 | Eo abs.: 1,30 |
| Ba abs.: 0,01 | [0,00..0,20] | Ba abs.: 0,00 |
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| **case 7** | **case 8** |
| Severe neutropenia, thrombocytopenia, slight anaemia **= pancytopenia after chemotherapy** | **Monocytic leukaemia** (absolute monocytosis, severe thrombocytopenia, slight anaemia (ACD) |

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| **17.06.2023** | **Interim case 03** | **26.06.23** |
| **Blood picture** | **Normal values** | **Blood picture** |
| **Leu: 16,32** | [4,00…10,00] | **Leu: 7,53** |
| Ery: 3,57 | [4,00...5,80] | Ery: 3,73 |
| **HGB: 92** | [135…175] | **HGB: 97** |
| HCT: 0,282 | [0,400...0,500] | HCT: 0,311 |
| **MCV: 79,0** | [82,0…98,0 | MCV: 83,4 |
| MCH: 25,8 | [28,0...34,0] | MCH: 26,0 |
| MCHC: 326 | [320...360] | MCHC: 312 |
| **RDW: 15,9** | [10,0..15,2] | RDW: 17,0 |
| Plt: 258 | [150..400] | Plt: 307 |
|  | **Diff count relat** |  |
| **Ne: 54,3** | [45,0...70,0] | Ne: 68,0 |
| **Ly: 15,0** | [20,0...45,0] | Ly: 21,2 |
| Mo: 9,9 | [2,0...12,0] | Mo: 7,6 |
| Eo: 1,1 | [0,0...5,0] | Eo: 2,9 |
| Ba: 0,4 | [0,0...2,0] | Ba: 0,3 |
| **Immature granulocytes 19,3** | - |  |
|  | **Diff absol.** |  |
| **Ne abs.: 7,62** | [2,00...7,00] | Ne abs.: 4,38 |
| Ly abs.: 2,10 | [0,80...4,00] | Ly abs.: 1,37 |
| Mo abs.: 1,38 | [0,80...4,00] | Mo abs.: 0,49 |
| Eo abs.: 0,16 | [0,00...0,50 | Eo abs.: 0,19 |
| Ba abs.: 0,05 | [0,00...0,20] | Ba abs.: 0,02 |
| **Immature granulocytes** 2,70 | - |  |
|  | **Diff microscope** |  |
| Segm: 78,8 | [45,0...70,0] |  |
| **Bands: 5,5** | [0,0 – 4,0] |  |
| Ly: 6,1 | [20,0 - 45,0] |  |
| Mo: 8,1 | [2,0 -12,0] |  |
| **Mmy: 2, 5** | - |  |
| **My: 5,4** | - |  |
| **Promy: 0,5** | - |  |
|  | **Proteins** |  |
| **CRP - 299,2** | [0,0 – 5,0] | **CRP - 40,2** |
| TP (total protein) : 67,5 | 65-85 g/l] |  |
| **(EP - Protein electrophoresis):** |  |  |
| Alb. %: 33,10 | [55,8 – 66,1] |  |
| **A1G %: 7,20** | [2,9 – 4,90] | **A1G %: 6,10** |
| **A2G %: 19,30** | [7,1 – 11,8] | **A2G %: 17,30** |
| **GG %: 23,8** | [11,1 – 18,8 %] | **GG %: 29,00** |
| **GG: 15,66** | [5,8-15 20 g/l ] | **GG: 19,58** |
|  |  |  |
| **M-G: negat** | [0,0-0,1 ] |  |

**Erysipel of a lower leg - sepsis**… necrotic skin, area 2x3 cm, plus subcutaneous necrotic tunnel… cutaneous smear – bacteriology- *Staphylococcus aureus*

**Erysipel, sepse -** nekrotický kožní kryt vel. 2x3cm + v podkoží chobot 3 cm též s nekrózami …lividní kožní lem vel. 4x4cm... stěr z defektu: *Staphylococcus aureus*

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| **case 09** |  | **case 10** |
| **Blood picture + bioch** | **Normal values** | **Blood picture** |
| Leu: **2,77** | [4,00..10,00] | Leu: 7,51 |
| Ery: **2,27** | [4,00..5,80] | Ery: 4,07 |
| HB: **73** | [135..175] | HGB: **131** |
| HTC: **0,219** | [0,400..0,500] | HCT: **0,383** |
| MCV: 96,5 | [82,0..98,0 | MCV: 94,1 |
| MCH: 32,2 | [28,0..34,0] | MCH: 32,2 |
| MCHC: 333 | [320..360] | MCHC: 342 |
| RDW: **16,1** | [10,0..15,2] | RDW: 13,6 |
| Plt: **42** | [150..400] | Plt: 179 |
| Differential count relative |  |  |
| Ne: **70,4** | [45,0..70,0] | Ne: 66,9 |
| Ly: **19,9** | [20,0..45,0] | Ly: 22,5 |
| Mo: 9,7 | [2,0..12,0] | Mo: 8,3 |
| Eo: 0,0 | [0,0..5,0] | Eo: 2,1 |
| Ba: 0,0 | [0,0..2,0] | Ba: 0,1 |
| Differential count absol. |  |  |
| Ne abs.: **1,95** | [2,0..12,0] | Ne abs.: 5,02 |
| Ly abs.: **0,55** | [0,0..5,0] | Ly abs.: 1,69 |
| Mo abs.: 0,27 | [0,0..2,0] | Mo abs.: 0,62 |
| Eo abs.: 0,00 | [2,00..7,00] | Eo abs.: 0,16 |
| Ba abs.: 0,00 | [0,80..4,00] | Ba abs.: 0,01 |
| **Coagulation** |  |  |
| Quick test -INR: **2,28** | [0,80 – 1,20] | INR: 1,04 |
| APTT: **51,4** | [25,9 – 40 s] | APTT: **23,9** |
| Fibrinogen: **5,31** |  |  |
| **Nitrogen catabolites**: |  |  |
| Urea: **9,9** | [2,8 – 8,0] | Urea: 4,2 |
| Creatinine.: **229** | [44-110] | Kreat.: 89 |
| Uric acid.: 274 | [220 – 420] | Uric acid: **456** |
| **Proteins:** |  |  |
| **T**otal **P**rotein **126,6** | [65,0...85,0] | **TP: 109,2** |
| FKAP: **1,43** | [3,30..19,40] | FKAP: 8,49 |
| FLAM: **26592,00** | [5,71..26,30] | **FLAM: 221,23** |
| **M-G 48,0** | [0,00..0,10] | **M-G 43,83** |
| **IEP:** paraprotein **IgG L** |  | **IEP:** paraprotein **IgM L** |
| Plasma cells: 18 % | **Bone marrow - FACS** | **Ly %13,4 %, Pl.c.:0,8 %** |
| Plasma cells: 38 % | **Trephin biopsy** | Lymphocytes with plasmocellular differentiation: 30 % |

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| **case 09** | **case 10** |
| Multiple **myeloma** IgG labda B; anemia, thrombocytopenia; renal insufficiency hyperproteinemia, coagulopathy | Lymphoplasmocellular lymphoma + IgM lambda = Waldenström macroglobulinemia |

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| **Case 11 - UHKT** | | |
| **Blood picture (CBC)**: | **Result** | **Normal values** |
| Leu | **97.97** 10^9/l | 4.00-10.00 |
| Ery | 2.88 10^12/l | 3.80-5.20 |
| Hgb | **88** g/l | 120-160 |
| HTC | 0.259 1 | 0.350-0.470 |
| MCV | 89.9 fl | 82.0-98.0 |
| MCH (Stř. obsah Hgb v erytrocytu | 30.6 pg | 28.0-34.0 |
| MCHC (Stř. koncentrace Hgb v ery | 340 g/l | 320-360 |
| RDW (Distr. šíře dle objemu ery) | 15,00 % | 10.00-15.20 |
| RTC absol | **0.010** 10^12/l | 0.025-0.100 |
| RTC relat | **0.34 %** | 0.50-2.50 |
| MCH RTC (Stř. obsah Hgb v rtc) | 36.7 pg | 28.0-35.0 |
| Thrombocytes | 53 10^9/l | 150-400 |
| **Differential relative** |  |  |
| Neutrophils | 44.0 % | 45.0-70.0 |
| Lymphocytes | 17.8 % | 20.0-45.0 |
| Monocytes | 38.2 % | 2.0-12.0 |
| Eo | 0.0 % | 0.0-5.0 |
| Baso | 0.0 % | 0.0-2.0 |
| **Differential absol.** |  |  |
| Neutrophils | 43.12 10^9/l | 2.00-7.00 |
| Lymphocytes | 17.42 10^9/l | 0.80-4.00 |
| Monocytes | 37.39 10^9/l | 0.08-1.20 |
| Eo | 0.00 10^9/l | 0.00-0.50 |
| Baso | 0.04 10^9/l | 0.00-0.20 |
| **Differential count – microscope** |  |  |
| Segment neutro | 1.0 % | 47.0-70.0 |
| Band - neutro | 0 % | 0.0-4.0 |
| Lymphocyte | 9.0 % | 20.0-45.0 |
| Prolymphocyte . . . . . | 0 % | 0.0-0.0 |
| Large granular lymphocytes | 0 % | 0.0-10.0 |
| Monocytes | 55.5 % | 2.0-10.0 |
| Eosino | 0 % | 0.0-5.0 |
| Baso | 0 % | 0.0-1.0 |
| Neutrophile metamyelocyte | **0 %** | 0.0-0.0 |
| Neutrophile myelocyte | **0 %** | 0.0-0.0 |
| Promyelocyte | **0 %** | 0.0-0.0 |
| Blast | **32.**0 % | 0.0-0.0 |

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| **Case 11 - UHKT**  Leukocytosis, anaemia, thrombocytopenia  **Diff: monocytosis, blasts 32% - (AML)**  Hiatus leucaemicus (**leukemic gap**): extensive lack of **mean** stages of maturation of myelopoiesis in the differential blood count or in the bone marrow |

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| **Case 12 – UHKT** | | |
| **Blood picture (CBC)**: | **Results** | **Normal values** |
| Leu | **631.79** 10^9/l | 4.00-10.00 |
| Ery | 2.40 10^12/l | 3.80-5.20 |
| Hgb | **83.00** g/l | 120-160 |
| Hct | 0.230 1 | 0.350-0.470 |
| MCV | 95.80 fl | 82.0-98.0 |
| MCH (Mean corpuscular Hb) | 34.60 pg | 28.0-34.0 |
| MCHC (Mean corpuscular Hb concentration) | 361.00 g/l | 320-360 |
| RDW (red distribution width | 19.70 % | 10.00-15.20 |
| RTC absol | 0.072 10^12/l | 0.025-0.100 |
| RTC relat | 3.01 % | 0.50-2.50 |
| Thrombocytes | 220.00 10^9/l | 150-400 |
| **Differential absol.** |  |  |
| Neutrophils | 512.63 10^9/l | 2.00-7.00 |
| Lymphocytes | 27.53 10^9/l | 0.80-4.00 |
| Monocytes | 11.86 10^9/l | 0.08-1.20 |
| Eo | 5.44 10^9/l | 0.00-0.50 |
| Baso | 74.33 10^9/l | 0.00-0.20 |
| **Differential relative** | **Differential relative** |  |
| Neutrophils | 81.00 % | 45.0-70.0 |
| Lymphocytes | 4.40 % | 20.0-45.0 |
| Monocytes | 1.90 % | 2.0-12.0 |
| Eo | 0.90 % | 0.0-5.0 |
| Baso | 11.80 % | 0.0-2.0 |
| Immature granulo | 318.64 10^9/l |  |
| Immature granulo | 50.40 % |  |
| Erythroblasts | 3.75 10^9/l |  |
| Erythroblasts | 0.60 /100WBC |  |
| **Differential count – microscope**: | |  |
| Segment neutro | 29.00 % |  |
| Band - neutro | 27.00 % |  |
| Lymphocyte | 0 % |  |
| Prolymphocyte . . . . . | 0 % |  |
| Large granular lymphocytes | 0 % |  |
| Monocytes | 1.00 % |  |
| Eosino | 2.00 % |  |
| Baso | 3.00 % |  |
| Neutrophile metamyelocyte | 11.00 % |  |
| Neutrophile myelocyte | 21.00 % |  |
| Promyelocyte | 3.00 % |  |
| Blast | 3.00 % |  |
| **BCR-ABL** - . . .  **positive** – inf the region major **BCR-ABL**  **Cytogenetics** . . .Mitoses:: 22 : 46,XY**, t(9;22**)(q34;q11) | |  |

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| **Case 12 -– UHKT** |
| **Chronic myeloid leukemia**  Hyperleukocytosis, anaemia,  Positivity of fusion gen **bcr/abl**, presence of **Philadelphia chromosome** |

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| **case 13** |  | **case 14** |
| **Blood picture** | **Normal values** | **Blood picture + bioch** |
| **Leu: 205,79** | [4,00..10,00] | Leu: 7,06 |
| Ery: 4,16 | [3,80..5,20] | Ery: 3,84 |
| HB: 107 | [120..160] | HGB: 60 |
| HTC: 0,376 | [0,350..0,470] | HCT: 0,242 |
| MCV: 90,4 | [82,0..98,0] | MCV: 63,0 |
| MCH: 25,7 | [28,0..34,0] | MCH: 15,6 |
| MCHC: 285 | [320..360] | MCHC: 248 |
| RDW: 20,4 | [10,0..15,2] | RDW: 24,0 |
| Plt: 112 | [150..400] | Plt: 247 |
| Differential count relative |  | Differential count relative |
| Ne: 2,3 | [45,0..70,0] | Ne: 54,7 |
| Ly: 95,5 | [20,0..45,0] | Ly: 24,2 |
| Mo: 1,8 | [2,0..12,0] | Mo: 15,4 |
| Eo: 0,1 | [0,0..5,0] | Eo: 4,1 |
| Ba: 0,3 | [0,0..2,0] | Ba: 1,6 |
|  |  | Rtc 15 %[5,0 - 25] |
|  |  | 0,055 absol [0,025 – 0,1] |
|  |  | **Minerals** |
| Differential count absol. |  | Fe 1,7 [6,0 - 28] |
| Ne abs.: 4,61 | [2,00..7,00] | TIBC: 60,6 [40,8..76,6 |
| **Ly abs.: 196,55** | [0,80..4,00] | Fe-saturation 0,03 |
| Mo abs.: 3,77 | [0,80..4,00] | **Proteins:** |
| Eo abs.: 0,27 | [0,00..0,50 | Transferrin: 3,84 [2,00..3,60] |
| Ba abs.: 0,59 | [0,00..0,20] | Trf saturation: 2,6 [19,0..49,0] |
| **Gumprecht's shadows: 31** |  | Ferritin: 3,2 [10,0..291,0] |
| **or: smudge cells** |  |  |

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| **case 13** | **case 14** |
| CLL - thrombocytopenia, anaemia, anisocytosis, Rai 2 | Iron deficiency anaemia (microcytic, hypochromic, sideropenic) |

**NCI Common Terminology Criteria for Adverse Events grading of hematologic toxicity**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Blood element (units)** | **Grade 1** | **Grade 2** | **Grade 3** | **Grade 4** | **Grade 5** |
| Neutrophils | <LLN to 1500/mm3 | 1000 to 1500/mm3 | 500 to 1000/mm3 | <500/mm3 |  |
| Platelets | <LLN to 75,000/mm3 | 50,000 to 75,000/mm3 | 25,000 to 50,000/mm3 | <25,000/mm3 |  |
| Haemoglobin | <LLN to 10 g/dL | 8.0 to 10.0 g/dL | <8.0 g/dL | Life-threatening consequences: urgent intervention indicated | Death |
| CD4 count | <LLN to 500/mm3 | 200 to 500/mm3 | 50 to 200/mm3 | <50/mm3 |  |
| Lymphocytopenia | <LLN to 800/mm3 | 500 to 800/mm3 | 200 to 500/mm3 | <200/mm3 |  |
| Febrile neutropenia |  |  | ANC <1000/microL with a single temperature >38.3°C (100.4°F) or a sustained temperature ≥38°C (100°F) for more than one hour | Life-threatening consequences: urgent intervention indicated | Death |

LLN: lower limit of normal.

*With permission from: Common Terminology Criteria for Adverse Events, version 4.0, June 2010, National Institutes of Health, National Cancer Institute, file://evs.nci.nih.gov/ftp1/CTCAE/CTCAE\_4.03\_2010-06-14\_QuickReference\_5x7.pdf.*