NEJM 勉強会 2011 年度第 3 回 2011 年 4 月 27 日Bプリント 担当：田宗秀隆

Case 40-2009: A 29-Year-Old Man with Fever and Respiratory Failure.

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#1 9 日前からの発熱
#2 呼吸不全・頻呼吸・呼吸困難
#3 咳嗽（乾性→湿性）
#4 下肢の筋痛
#5 頭痛
#6 頻脈
#7 背部痛
#8 陰嚢痛
#9 Rhonchi
#10 胸部レントゲン異常（肺炎・リンパ節腫脹）
#11 悪心
#12 嘔吐（血液混じった嘔吐物）
#13 ダニとの接触の既往
#14 白血球減少症
#15 SIRS（#1, #2, #6, #13。入院 1 日前。
定義：BT≧38、PR≧90、RR≧20 と白血球数異常≦4000, ≧12000 のうち 2 つ以上）
#16 リンパ球減少症（・好中球増加症？）
#17 血小板減少症→後に DIC 状態？
#18 低ナトリウム血症（入院後）
#19 AG 増加（19; 基準 12±2）の代謝性アシドーシス（入院後）
#20 BUN・Cre 上昇・GFR 低下所見・乏尿（入院後）
#21 肝臓系の酵素異常（入院後）
#22 炎症系マーカー高値（入院後）
#23 低カルシウム血症（入院後）
#24 中性脂肪高値・リパーゼ高値・Amylase 高値（入院後）
#25 尿沈査で円柱（入院後）
#26 抗核抗体陽性（入院後）
#27 低血圧→ショック？（入院後）
#28 瞳孔不同（入院後）

発熱は

| 7 日前 | 4 日前 | 3 日前 | 1 日前 | 入院時 | 第 1 病日最高時 |
|---|---|---|---|---|---|
| 39.4℃ | 38.2℃ | 39.0℃ | 38.6℃ | 37.3℃ | 39.4℃ |

**Table 1. Laboratory Data.***

| Variable | Reference Range, Adults† | Other Hospital | | | | This Hospital | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 4 Days before Admission | 3 Days before Admission | 1 Day before Admission | Day of Admission | On Admission | 2nd Day | 3rd Day (Morning) | 3rd Day (Evening) |
| Hematocrit (%) | 41.0–53.0 (men) | 42 | 45 | 44 | 41.5 | 38.2 | 38.1 | 40.7 | 42.1 |
| Hemoglobin (g/dl) | 13.5–17.5 (men) | 14.5 | 15.1 | 15.3 | 14.2 | 13.4 | 13.7 | 14.6 | 15.1 |
| White-cell count (per mm³) | 4,500–11,000 | 4,400 | 4,000 ↓ | 3,200 ↓ | 2,200 ↓ | 2,300 ↓ | 4,700 | 8,800 | 9,000 |
| Differential count (%) | | | | | | | | | |
| Neutrophils | 40–70 | 79 ↑ | 71 | 86 ↑ | 79 | 69 | 54 | 92 ↑ | 82 ↑ |
| Band forms | 0–10 | 0 | | | | 19 ↑ | 18 ↑ | 4 | 10 |
| Lymphocytes | 22–44 | 13 ↓ | 21 ↓ | 10 ↓ | 17 ↓ | 11 ↓ | 21 ↓ | 3 ↓ | 4 ↓ |
| Atypical lymphocytes | 0 | 0 | | 0 | 0 | 0 | 1 | 0 | 0 |
| Monocytes | 4–11 | 6 | 7 | 3 | 4 | 1 | 5 | 1 | 4 |
| Eosinophils | 0–8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basophils | 0–3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Metamyelocytes | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Platelet count (per mm³) | 150,000–400,000 | 98,000 ↓ | 90,000 ↓ | 86,000 ↓ | 85,000 ↓ | 103,000 (some large forms) ↓ | 160,000 | 234,000 | 192,000 |
| Erythrocyte sedimentation rate (mm/hr) | 0–11 (men) | 4 | | | | 7 | | | |
| Activated partial-thromboplastin time (sec) | 21.0–33.0 | | | | | 39.3 | | 77.1 (manual, lipemic specimen) ↑ | >150.0 (lipemic specimen) ↑ |
| Prothrombin time (sec) | 10.8–13.4 | | | | | 15.4 ↑ | | 14.9 (lipemic specimen) ↑ | 14.5 (lipemic specimen) ↑ |
| International normalized ratio | | | | | | 1.3 | | 1.3 (lipemic specimen) | 1.2 (lipemic specimen) |
| Sodium (mmol/liter) | 135–145 | 131 | 135 | 130 | 133 | 136 | 126 ↓ | 123‡ ↓ | 128 ↓ |
| Potassium (mmol/liter) | 3.4–4.8 | 3.9 | 3.9 | 3.5 | 3.7 | 3.4 | 3.8 | 5.1 ↑ | 5.1 ↑ |
| Chloride (mmol/liter) | 100–108 | 100 | 98 ↓ | 95 ↓ | 99 ↓ | 98 ↓ | 92 ↓ | 88 ↓ | 86 ↓ |
| Carbon dioxide (mmol/liter) | 23.0–31.9 | 23 | 25 | 24 | 25 | 24.6 | 19.7 ↓ | 21.3 ↓ | 22.7 ↓ |
| Urea nitrogen (mg/dl) | 8–25 | 13 | 9 | 14 | 9 | 8 | 23 | 40 ↑ | 36 ↑ |
| Creatinine (mg/dl) | 0.60–1.50 | 0.86 | 0.89 | 0.77 | 0.83 | 0.79 | 2.47 ↑ | 5.38‡ ↑ | 5.56 ↑ |
| Estimated glomerular filtration rate (ml/min/1.73 m²) | ≥60 | >60 | >60 | | | >60 | 34 ↓ | 14 ↓ | 13 ↓ |
| Glucose (mg/dl) | 70–110 | 111 | 103 | 131 | 125 | 106 | 102 | 89 | 88 |
| Bilirubin (mg/dl) | | | | | | | | | |
| Total | 0.0–1.0 | 0.2 | 0.3 | 0.5 | 0.5 | 0.4 | 0.7 | 4.1 ↑ | |
| Direct | 0.0–0.4 | | | 0.1 | 0.1 | 0.2 | 0.3 | 2.5 ↑ | |
| Protein (g/dl) | | | | | | | | | |
| Total | 6.0–8.3 | 6.5 | 6.7 | 6.6 | 6.0 | 5.8 ↓ | | 5.6 ↓ | |
| Albumin | 3.3–5.0 | 4.0 | 4.0 | 3.9 | 3.5 | 3.3 | | 3.0 ↓ | |
| Globulin | 2.6–4.1 | 2.5 | 2.7 | 2.7 | 2.5 | 2.5 | | 2.6 | |
| Phosphorus (mg/dl) | 2.6–4.5 | | | | | 2.7 | 4.1 | 6.0 ↑ | |
| Magnesium (mmol/liter) | 0.7–1.0 | | | | | 0.6 | 0.7 | 0.9 | |
| Calcium (mg/dl) | 8.5–10.5 | | 8.3 (ref 8.4–10.2) | 8.3 (ref 8.4–10.2) | 7.4 ↓ (ref 8.4–10.2) | 7.3 ↓ | 7.2 ↓ | 7.2 ↓ | |
| Creatine kinase (U/liter) | 60–400 (men) | | 222 | | | 1712 ↑ | | 2935 ↑ | 5798 ↑ |
| Creatine kinase MB isoenzymes (ng/ml) | 0.0–6.9 | | | | | 3.6 | | | 7.8 |
| Troponin T (ng/ml) | <0.03 | | | | | | | | <0.01 |
| Alkaline phosphatase (U/liter) | 45–115 | 64 | 60 | 66 | 67 | 58 | 67 | 87 | |
| Aspartate aminotransferase (U/liter) | 10–40 | 24 | 65 | 256 ↑ | 785 ↑ | 865 ↑ | 736 ↑ | 717 ↑ | |
| Alanine aminotransferase (U/liter) | 10–55 | 21 | 77 | 355 ↑ | 801 ↑ | 850 ↑ | 658 ↑ | 543 ↑ | |
| Amylase (U/liter) | 3–100 | | | 30 | | | | 444 ↑ | |
| Lipase (U/liter) | 13–60 | | | 68 | | | | 495 ↑ | |
| Lactate dehydrogenase (U/liter) | 110–210 | | | | | 1,498 ↑ | 2,136 ↑ | | 3,125 ↑ |
| Fibrinogen (mg/dl) | 150–400 | | | | | 267 | | 258 (lipemic specimen) | |
| D-Dimer (ng/ml) | <500 | | | | | 5,390 ↑ | | 5,665 ↑ | |
| Triglycerides (mg/dl) | 40–150 | | | | | | | 1,300 ↑ | |
| Cholesterol (mg/dl) | <200 | | | | | | | 111 | |
| High-density lipoprotein (mg/dl) | 35–100 | | | | | | | 6 ↓ | |

* Ref denotes the reference range at the other hospital. To convert the values for urea nitrogen to millimoles per liter, multiply by 0.357. To convert the values for creatinine to micromoles per liter, multiply by 88.4. To convert the values for glucose to millimoles per liter, multiply by 0.05551. To convert the values for bilirubin to micromoles per liter, multiply by 17. To convert the values for phosphorus to millimoles per liter, multiply by 0.3229. To convert the values for magnesium to milligrams per deciliter, divide by 0.4114. To convert the values for calcium to millimoles per liter, multiply by 0.250.

† Reference values are affected by many variables, including the patient population and the laboratory methods used. The ranges used at Massachusetts General Hospital are for adults who are not pregnant and do not have medical conditions that could affect the results. They may therefore not be appropriate for all patients.

‡ The number has been corrected for lipemia.