**Case 1:**

An 82-year-old female resident displayed the following signs: High fever for 24 hours; lethargy past 2 days; cloudy, foul-smelling urine; and dysuria. Urinalysis microscopic exam and culture sensitivity were ordered.

*Urinalysis Report:*

| **Macroscopic Analysis** | **Normal** | **Date: 06/16/03** |
|---|---|---|
| Color | Pale yellow-amber | Yellow |
| Clarity | Clear to slightly hazy | Cloudy * |
| **Urine chemistries** | | |
| Specific gravity | 1.005–1.030 | 1.0–2.0 * |
| Glucose | Negative | Negative |
| Ketones | Negative | Negative |
| pH | 5.0–8.0 | 8.5 High |
| Protein | Negative | 30 * |
| Blood | Negative | Small * |
| Bilirubin | Negative | Negative |
| Urobilinogen | 0.2–1.0 EU/dL | 0.2 |
| Nitrite | Negative | Pos * |
| Leukocyte ester | Negative | Small |
| **Microscopic examination** | | |
| BACT/hpf | None | 4+ * |
| WBC/hpf | 0–2 | 50–100 |
| RBC/hpf | 0–2 | 2–5 * |

* = abnormal, HPF = high-powered field, LPF = low-powered field, NEG = negative, BACT = bacteria, WBC = white blood cells, RBC = red blood cells, SPEC = specific (as in specific gravity), POS = positive, TRC = trace, ABN = abnormal, EU = Ehrlich units, MIC = minimum inhibitory concentration (the lowest concentration of the antibiotic that inhibits the organism's growth), S = sensitive or susceptible, R = resistant, TMP-SMX = trimethoprim sulfamethoxazole

1. **What is the diagnosis and treatment for this patient? Why?**

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2. **What accounts for the clarity of the sample in the chemical and microscopical examination?** _____

3. **Comment on each abnormal parameter (*explanations*).**

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