Warburg Effect Masquerading as Septic Shock in Hepatosplenic T-Cell Lymphoma

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BACKGROUND

- **Warburg effect:** tumor cells rely on glycolysis even when oxygen is adequate.
- In aggressive lymphoma, it can cause **lactic acidosis and hypoglycemia that mimic septic shock**.

CASE PRESENTATION

52-year-old man with recently diagnosed hepatosplenic T-cell lymphoma (HSTCL)

- Weakness, anorexia, nausea
- BP 86/66 mmHg, RR 24, SpO_2 95% on room air
- Recent UTI; prior urethral carcinoma, diabetes

Admission labs	
WBC	1.2 ×10³/µL
Platelets	35 ×10³/µL
Bicarbonate	17 mEq/L
Lactate	2.4 mmol/L
AST / ALT	389 / 121 IU/L

CLINICAL COURSE

Day 1
Treated as septic shock
IV fluids, empiric antibiotics

Day 3
Sudden collapse
After sedation for bone marrow biopsy

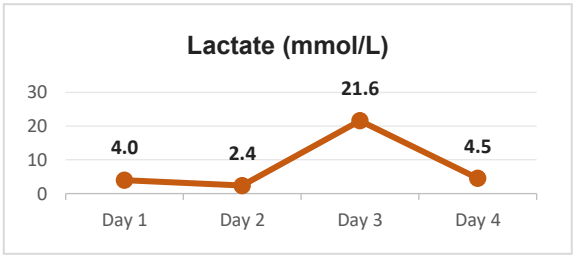
Day 3–4
Maximal support
Intubation, pressors, bicarbonate, dextrose, CRRT

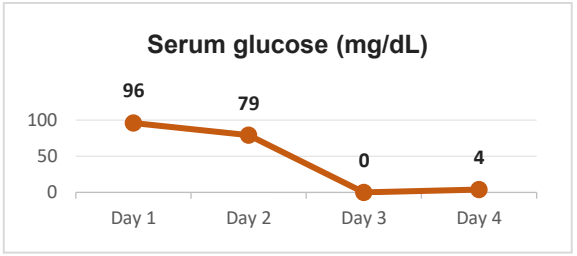
Outcome
Multiorgan failure
Transitioned to comfort care; died

DAY 3 LABS

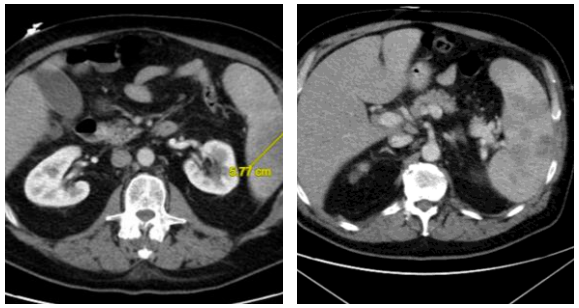
6.77 pH	21.6 Lactate, mmol/L
0 Glucose, mg/dL	3.4 HCO_3^-, mmol/L

THE WARBURG SIGNATURE





CT ABDOMEN



Splenomegaly with hypodense splenic lesions

SEPSIS OR WARBURG?

	Sepsis	Warburg
Lactate	Tracks perfusion	Out of proportion
Glucose	Variable	Refractory low
Antibiotics	Help	No response
Treatment	Antimicrobials	Urgent chemo

LEARNING OBJECTIVES

1. **Recognize** lactic acidosis with refractory hypoglycemia in aggressive lymphoma as a possible Warburg effect.
2. **Distinguish** it from septic shock by lactate, glucose and response to antibiotics.
3. **Start** cytoreductive therapy early, alongside metabolic support.

TAKE-HOME

In aggressive lymphoma, sepsis that doesn't behave like sepsis may be the tumor. **Treat the lymphoma early.**

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Disclosures and conflicts of interest: none