



Severe rhabdomyolysis due to SARS CoV-2 infection in a young adult



Chloe Zimmerman, MD, Christina Johns, MD, Cherise Rowan, MD, Matthew Grossman, MD

Yale Internal Medicine-Pediatrics Residency Program, New Haven, Connecticut

Yale Department of Pediatrics, New Haven, Connecticut

LEARNING OBJECTIVES

1. Recognize rhabdomyolysis as a rare presentation of SARS-CoV2
2. Review management of rhabdomyolysis to prevent AKI and electrolyte derangements

CASE DESCRIPTION

Host:

33yo man with PMH elevated BMI (34 kg/m²) and asthma

Meds: inhaled budesonide-formoterol

No supplements, OTC medications, or illicit substance use

Setting:

Urgent care

Chief concern:

3d of cough, shortness of breath, fever, and progressive, diffuse myalgias

ED Exam

Vitals: T 102.1° F, otherwise normal

Uncomfortable appearing young man

Generalized abdominal TTP w/ voluntary guarding

Exquisite TTP over anterior chest wall, L shoulder and upper arms, B/L thighs and calves

HOSPITAL COURSE

Admission labs:

- UA: 3+ blood, no RBCs
- CK >100,000
- ALT 149, AST 764
- CRP 17, ferritin 631
- WBC 8.3 (ALC 1000)
- Electrolytes normal
- Positive SARS-CoV2 PCR

Management

- Aggressive IV hydration to maintain UOP of 2-3 cc/kg/hr
- Alternated fluids between LR, isotonic NaHCO₃ in D5W, NS, and 1/2NS w/ 75 mEq NaHCO₃ to maintain normal acid-base status
- Also treated with 5d of hydroxychloroquine and one dose of tocilizumab per hospital COVID-19 treatment algorithm

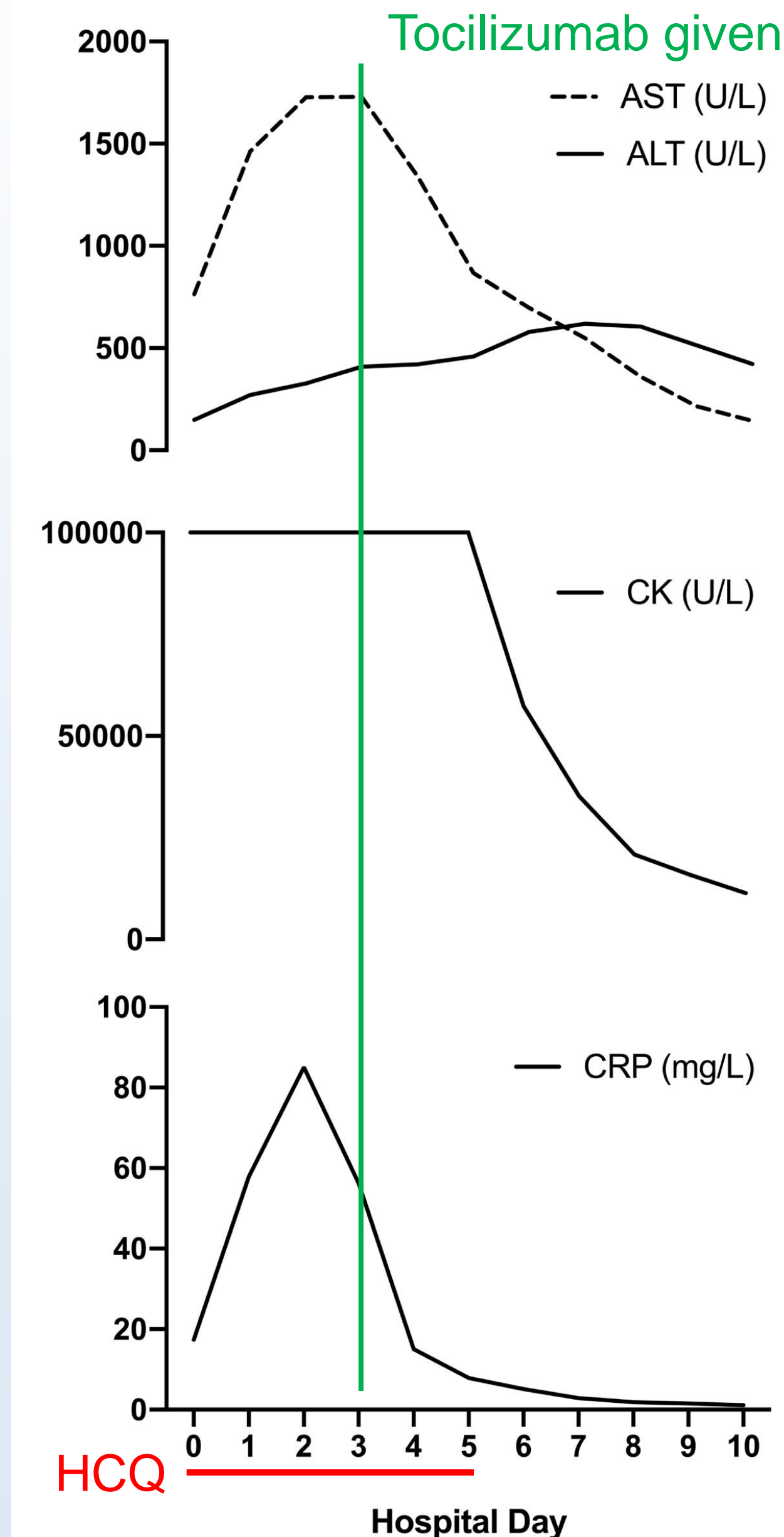
Course

- Serum CK remained >100,000 until HD5
- Did not develop AKI, hyperK, or fluid overload during hospitalization
- Max respiratory support 2L on HD3

Discharge

- Completed 24hr PO hydration challenge on HD10 once CK had decreased to 11,392
- Follow-up labs: CK 689 12 days post-discharge

Figure 1. Markers of muscle break down and inflammation over time



DISCUSSION

Rhabdomyolysis

- Muscle injury most commonly due to trauma, medications/drugs, viral infections
- Manifestations: myalgias, myoglobinuria
- Complications: AKI, hyperK

Association with COVID-19

- Previous reports limited, largely late findings in patients who presented w/ respiratory manifestations of COVID-19
- Pathophysiology unknown

In our patient

- Rhabdomyolysis attributed to SARS-CoV2
- Pathophysiology remains unclear, however given early presentation, direct myotoxicity of SARS-CoV2 may be considered

LEARNING POINTS

1. Rhabdomyolysis is rare presentation of SARS-CoV2 and should be considered in patients presenting with +PCR and severe myalgias
2. AKI and electrolyte derangements can be managed w/ aggressive IV hydration in patients with rhabdomyolysis
3. Pathophysiology remains unknown