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# Successful VA ECMO for a pre-B cell acute lymphoblastic leukemia patient with necrotizing fasciitis from *Clostridium septicum*

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## Children's Mercy Kansas City

### Background

- Pediatric necrotizing fasciitis survival is 60-90%, but repeat surgical interventions are likely (1-3)
- Adolescent ALL survival is 60-90% (4, 5)

### History

- 16yo with new pre-B-cell ALL diagnosis presenting with ileocolic intussusception and subsequent *Clostridium septicum* bacteremia
- Underwent successful surgical reduction
- Induction chemotherapy started and ten-day course of antibiotics completed

### Cannulation

- On HD 15, abdominal CT with free air (Figures 1 and 2)
- Found to have LLQ necrotizing fasciitis and underwent debridement and silo placement
- Hemodynamic instability, lactic acidosis and concern for septic shock progressed after the OR
- Experienced 16-minute arrest and cannulated to VA ECMO
- Subsequently grew *Clostridium septicum* again from blood cultures



Figure 1. CT of Abdomen showing foci of free air in the abdomen



Figure 2. CT of abdomen showing foci of free air in the anterior abdomen

### ECMO Course

- Bivalirudin used due to its short half-life in anticipation of surgical procedures
- Repeat surgical debridement on ECMO
- Chemotherapy held
- Tandem plasma exchanges alternated with Granulocyte infusions
- Large volume GI bleed
- Successfully decannulated on ECMO day 8

### Conclusion

- Understanding outcomes of the underlying disease and acute processes could improve with increased data collection and sharing
- ECMO candidacy should not be ruled out despite underlying immunosuppression or acute surgical needs
- Individualized approach to candidacy is warranted

#### REFERENCES:

- 1 Totapally, Balagandhar R. "Epidemiology and Outcomes of Hospitalized Children With Necrotizing Soft-Tissue Infections." *Pediatric Infectious Disease Journal*, vol. 36, no. 7, Ovid Technologies (Wolters Kluwer Health), July 2017, pp. 641-44. <https://doi.org/10.1097/inf.0000000000001498>.
- 2 Schröder A, Gerin A, Firth GB, Hoffmann KS, Grieve A, Oetzmann von Sochaczewski C. A systematic review of necrotising fasciitis in children from its first description in 1930 to 2018. *BMC Infectious Diseases*. 2019;19(1). doi:10.1186/s12879-019-3941-3
- 3 Lemaréchal A, Kaiser P, Szavay P, Zundel S. Diagnosis and Treatment of Pediatric Necrotizing Fasciitis: A Systematic Review of the Literature. *European Journal of Pediatric Surgery*. 2016;27(2):127-137.
- 4 Pui C-H, Pei D, Campana D, et al. Improved prognosis for older adolescents with acute lymphoblastic leukemia. *Journal of Clinical Oncology*. 2011;29(4):386-391. doi:10.1200/jco.2010.32.0325
- 5 Boissel N, Baruchel A. Acute lymphoblastic leukemia in adolescent and Young Adults: Treat as adults or as children? *Blood*. 2018;132(4):351-361. doi:10.1182/blood-2018-02-778530