

Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association

Volume 5
Issue 1 *OATA Supplemental Issue*

Article 10

May 2019

A College Athlete's Return from Severe Aplastic Anemia

Cole Miller

Kent State University, cmill173@kent.edu

Alex Walker

Kent State University

Follow this and additional works at: <https://scholarworks.bgsu.edu/jsmahs>



Part of the [Biomechanics Commons](#), [Exercise Science Commons](#), [Motor Control Commons](#), [Other Kinesiology Commons](#), [Rehabilitation and Therapy Commons](#), [Sports Medicine Commons](#), and the [Sports Sciences Commons](#)

Recommended Citation

Miller, Cole and Walker, Alex (2019) "A College Athlete's Return from Severe Aplastic Anemia," *Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association*: Vol. 5 : Iss. 1 , Article 10.

DOI: <https://doi.org/10.25035/jsmahs.05.01.10>

Available at: <https://scholarworks.bgsu.edu/jsmahs/vol5/iss1/10>

This Undergraduate Student Abstract is brought to you for free and open access by the Journals at ScholarWorks@BGSU. It has been accepted for inclusion in *Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association* by an authorized editor of ScholarWorks@BGSU.

A College Athlete's Return from Severe Aplastic Anemia

Cole Miller CRM, Alex Walker AW MA ATC LAT
Kent State University, Kent Ohio

BACKGROUND

Aplastic Anemia is a rare disorder that affects the hematopoietic stem cell. This results in a decrease of cell production in the bone marrow leading to Anemia. This is caused by the immune system attacking the hematopoietic stem cells. Treatment for this disorder are immunosuppressants, transplants of Hematopoietic stem cells, and bone marrow transplants. This can last years or even be a lifelong disorder (Georges, Doney, & Storb, 2018). In 2013 A twenty-one-year-old male athlete reported having headaches and fatigue. With continuing performance issues, headaches, and fatigue the athlete had bloodwork done. He was diagnosed with severe Aplastic anemia, differential diagnosis consists of paroxysmal nocturnal hemoglobinuria, and myelodysplastic syndrome. These were possible diagnosis due to the similarities of the disorder and similar signs and symptoms from headaches and fatigue to easily bruising.

TREATMENT

The athlete completed a Prednisone tapered treatment over a one-month period and continued with treating the condition with Cyclosporin for an additional six-months. The athlete's symptoms returned shortly after that and he was no longer responsive to immunosuppressant treatments when re-introduced to the immunosuppressants. On April thirteenth, 2017 the athlete underwent a haploidentical hematopoietic stem cell transplant with his biological father as the donor. After the transplant the athlete presented with Epstein-Barr virus and received a dosage of Rituximab about a month after the transplant. The athlete stayed in the

hospital for thirteen days while getting continued immunosuppressant medication and vitals monitored during this time.

OUTCOMES

Eventually the athlete was able to gradually stop taking immunosuppressants and blood work was within normal ranges with no evidence of Epstein-Barr virus or Graft-versus-host disease. The transplant and post-surgical treatments were successful in treating his severe aplastic anemia. The athlete was out of competition for three years during the time the transplant and treatments occurred. During spring training for the 2018 season the athlete started his return to play regiment. This consisted of monthly physician checkups and close monitorization of activity. The physical activities that were allowed varied on how the athlete felt along with clinician feedback from the physician. Since this is an autoimmune disorder the athlete is instructed to report any out of the normal signs and symptoms to make sure the Aplastic anemia does not return. Since it's an autoimmune disorder if the athlete becomes sick intervention is necessary to prevent any complications with this disorder. Prior to every game the athlete must check in with a team doctor and get cleared to play. When working with the patient the physician and athletic trainers must keep a constant look for excessive fatigue and other related symptoms of Aplastic anemia to try and prevent the disorder from returning. His rehab and return to play regiment was not limited due to an injury so it was primarily based on his own limits combined with feedback given to the physician and athletic trainer.

UNIQUENESS

The fact that the athlete had this disorder is unique within its self because this is a rare disorder. This disorder has no known exact incident rare but average around 1.5 to 7 cases out of one million people worldwide (Vaht, Krista, et al. 2017). You usually need a bone marrow donor to help treat it with a more permanent solution.

CONCLUSIONS

The athlete was diagnosed in 2013 and with transplants and medical intervention was cured of his Aplastic anemia in 2017. By following return to play procedures implemented by the athletic trainer and physician he was able to start participating in college football again. It is important to note that constant checkups were required to monitor the disorder and prevent it from re occurring. Ways to apply this in a clinical setting is making sure proper protocol and steps are taken to help diagnose treat and prevent further issues not only in this situation.

KEY WORDS: *Aplastic Anemia, Hematopoietic Stem Cells, Immunosuppressants, Epstein-Barr Virus, Graft-versus-host Disease.*

REFERENCES

1. Georges, George E., et al. "Severe Aplastic Anemia: Allogeneic Bone Marrow Transplantation as First-Line Treatment." *Blood Advances*, vol. 2, no. 15, 2018, pp. 2020–2028., doi:10.1182/bloodadvances.2018021162.
2. Hotta, Masaaki, et al. "Blastic Epstein-Barr Virus Associated Post-Transplant Lymphoproliferative Disorder after Allogeneic Stem Cell Transplantation for Severe Aplastic Anemia." *Hematology Reports*, vol. 10, no. 2, 2018, doi:10.4081/hr.2018.7527.
3. Vaht, Krista, et al. "Incidence and Outcome of Acquired Aplastic Anemia: Real-World Data from Patients Diagnosed in Sweden from 2000–2011." *Haematologica*, vol. 102, no. 10, 2017, pp. 1683–1690., doi:10.3324/haematol.2017.169862.
4. Williams, David A., et al. "Diagnosis and Treatment of Pediatric Acquired Aplastic Anemia (AAA): An Initial Survey of the North American Pediatric Aplastic Anemia Consortium (NAPAAC)." *Pediatric Blood & Cancer*, vol. 61, no. 5, 2013, pp. 869–874., doi:10.1002/pbc.24875.