Autoimmune hemolytic anemia (AIHA) is a rare and potentially life-threatening condition. This article presents a case study of AIHA in a patient with a history of acute myelogenous leukemia in remission. Differentiating the cause and type of HA (extrinsic versus intrinsic) will be discussed, along with information on follow-up and refractory AIHA. Advanced practice RNs (APRNs) play an essential role in the early recognition of HA, as well as the diagnosis, referral, and management of the condition.

AT A GLANCE

- Unexplained normocytic or macrocytic anemia can be a sign of more serious conditions, such as AIHA.
- APRNs are important to the recognition and prompt treatment of the potentially life-threatening complications of HA.
- AIHA can often be managed with prednisone, but refractory cases may require additional treatment, such as immunotherapy or splenectomy.

KEYWORDS
anemia; hemolytic; refractory; splenectomy; hematology; autoimmune disease

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Autoimmune Hemolytic Anemia

A case study presentation

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Anemia is one of the most common blood disorders, resulting in 2.8 million office visits per year in the United States (Rui & Okeyode, 2016). There are many causes of anemia. Anemia caused by premature destruction of red blood cells is referred to as hemolytic anemia (HA) (Hill et al., 2019; Jäger et al., 2020). In the general population, HA is relatively rare, with an incidence of 3 cases per 100,000 per year (Brodsky, 2019). HA can cause significant complications for patients, such as debility, fatigue, jaundice, dizziness, lightheadedness leading to falls, and easy fatigue (Brodsky, 2019). Advanced practice RNs (APRNs) are key to the early recognition of signs and symptoms of HA.

The etiology of HA can be varied and requires testing to sort out potential causes. Causes of HA characterize the mechanism of red blood cell destruction. Simply stated, extrinsic factors causing HA generally occur outside of the cell and are typically acquired. Intrinsic factors occur from within the red blood cell and can be caused by inherited or acquired red blood cell anomalies. Both extrinsic and intrinsic conditions leading to HA are summarized in Figure 1. HA can be further classified by either intravascular or extravascular hemolysis, as described in Table 1 (Barcellini et al., 2014).

The symptoms of HA vary based on the rapidity of onset, severity, compensatory mechanisms, previous treatments with chemotherapy or immunotherapy, and underlying causes, such as cancer. Mild cases of HA and those of a chronic nature may be relatively asymptomatic. Severe cases of HA or those that develop acutely may cause significant fatigue, jaundice, shortness of breath, and tachycardia. Serum hemoglobin decreases because the bone marrow can no longer compensate for the premature loss of red blood cells. HA cannot be independently treated with blood transfusions because the underlying disorder will continue to destroy transfused cells. For APRNs, HA is important to recognize in patients with unexplained normocytic or macrocytic anemia because complications of delayed treatment can be life-threatening (Mentzer & Schrier, 2018). The case study in this article will focus on autoimmune HA (AIHA) and treatment options.

Background

AIHA can manifest in two forms: extravascular and intravascular. Extravascular hemolysis occurs when red blood cell destruction is mediated by the phagocytic system in the liver or spleen. In contrast, intravascular hemolysis occurs in the vasculature and can be caused by a variety of disorders, resulting in alterations of the red blood cell membrane (Jäger et al., 2020). Laboratory testing, physical examination, and the patient's history provide key information in differentiating between specific causes of HA, thereby directing the best course of treatment (Philips & Henderson, 2018). AIHA requires treatment with steroids to mitigate the lymphocytic production of antibodies leading to red blood cell destruction.