Treatment and Diagnose Approach of Moderate Anemia Patient with Suspected Colorectal Cancer: Case Report

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Abstract: *Anemia is a global health problem and extremely common in hospitalized patients. It refers to decrease in the concentration of hemogloblin or hematocrit. The most common causes of iron deficiency anemia (IDA), elderly patients, and anemia associated with chronic disease. We present here a case of moderate anemia suspect of colorectal cancer with an Hb of 8.8 g/dL and use it to illustrate the therapeutic use of blood transfusions.*

Keywords: anemia, colorectal cancer, blood transfusion, packed red cell

1. Introduction

Anemia continues to be a global health problem that affects one third of the world's population and extremely common in hospitalized patients. It contributes to increased mortality and morbidity, neurodevelopmental disorders, and decreased work productivity.[1,2] Anemia refers to a decrease in the concentration of hemogloblin or hematocrit that can occur at any age from children to adults, resulting in a decrease in the oxygen-carrying capacity of red blood so that it cannot meet the body's physiological needs.[3] Hemoglobin normally works by providing oxygen to body tissues, if it is not healthy, it can cause anemia.[4]

The prevalence of decreased hemoglobin (Hb) levels is estimated at about 30% of the general population and 1.62 billion people suffer from anemia, equivalent to 24.8% of the global population.[3] This condition is influenced by sex at all ages, both in industrialized countries and in developing countries. In Italy, the estimated prevalence of anemia is mostly mild, hovering around 19%. Anemia was more prevalent in women, from age 15 to adulthood, and in older patients, 42% of subjects were over the age of eighty. [5]

The most common causes of iron deficiency anemia (IDA), elderly patients (>65 years), and anemia associated with chronic disease has a higher prevalence such as cancer, chronic kidney disease, nutritional deficiencies, hidden bleeding, blood loss gastrointestinal, ineffective use of antithrombotic drugs, erythropoiesis.[5,6,7] The clinical effects of anemia depend on its duration and severity. Gastrointestinal endoscopy or colonoscopy are highly recommended in chronic disease anemia, and it is hoped that it will reveal the cause in between 30-50% of patients.[8]

2. Case report

A 64-year-old female patient defecating like goat feces mixed with fresh blood for 3 months intermitten and accompanied by weakness throughout the body for 3 days. Although sometimes it was difficult to defecate, he did not complain of pain during bowel movements. Good appetite and no nausea, vomiting and fever. The patient only complained of dizziness. There is no history of other diseases.

Patient awareness is good, composmentis, with vital signs blood pressure 110/70 mmHg, heart rate 80/min, temperature 36°C, and respiratory rate 20/min. On examination, the eyes were slightly anemic. Cardiorespiratory normal, no tenderness on abdominal examination and no edema. Laboratory tests performed after admission showed Hb 8.8 g/dL, WBC ($9.7\times103/\mu L$), hematocrit (31.2%), platelets (419x103/μL), MCV 62.6 fL, and MCH 17.7 pg. The SARS-CoV-2 test is non-reactive. Colonoscopy shows suspected carcinoma of the rectum. The patient diagnosed moderate anemia caused by suspect of colorectal cancer.

Patients were given 2 Packed Red Cell (PRCs) therapy (1 PRC/day) until the Hb level rises, and 1 tablet of ferosus sulfas every 8 hours orally. On the first PRC administration within 24h, Hb increased to 10.2 g/dL, MCV 64.1 fL, and MCH 19.8 pg. The second PRC showed better results where Hb 12.5 g/dL, MCV 67.3 fL, and MCH 21.2 pg.

3. Discussion

Anemia is often caused by chronic diseases, one of which is cancer. Patients with colorectal cancer have decreased survival and quality of life.[9,10] In a European study of

patients admitted to cancer centers in 24 European countries, patients with lymphoma, myeloma, and leukemia were most often diagnosed with anemia (53% had a hemoglobin value <12g/dL), followed by gynecological cancer (49%) and gastrointestinal cancer (39%).[11]

Cancer anemia can be associated with a wide spectrum of symptoms, depending on the severity and speed of development.[9] Massive bleeding that is profuse or for a long time causes a decrease in the hemogloblin level. Fatigue is the most debilitating symptom.[8] Both complaints often appear in anemic patients with cancer, as well as in patients in this case.

In this study, a decrease in blood hemoglobin levels, mean corpuscular volume (MCV) erythrocyte levels, mean corpuscular hemogloblin (MCH) were signs of anemia based on laboratory tests.[12] The relationship between colonoscopy findings and hematologic findings is very important in determining the diagnosis and treatment to be given to these patients.

Blood transfusion is highly recommended and necessary in this or other cases with anemia. The therapy given in this case was Packed Red Cell (PRC) transfusion, the aim was to increase hemoglobin without significantly increasing the volume of blood.[13,14] Administration of 2 PRCs in this patient gave good results where the patient's Hb level rises to the normal limit of 12.5 g/dL. In addition, the patient was also given 3 tablets of ferosus sulfas a day, every 8 hours.

4. Conclusion

Chronic disease with prolonged bleeding causes anemia with decreased levels of hemogloblin, MCV and MCH. Low hemogloblin levels and bleeding are indications of PRC transfusion, the goal is to improve the patient's condition by increasing the hemoglobin level.

References

[1] Anwary Z, Stanikzai MH, Wyar WM, et al. Anemia among Women Who Visit Bost Hospital for Delivery in Helmand Province, Afghanistan. Hindawi. 2021; p.1-2.

[2] Chaparro CM, Suchdev PM. Anemia epidemiology, pathophysiology, and etiology in low- and middle-income countries. Ann N Y Acad Sci. 2019; 1450(1):1-14.

[3] Antwi-Bafour S, Hammond S, Adjie JK, et al. A case–control study of prevalence of anemia among patients with type 2 diabetes. Journal of Medical Case Reports. 2016; 10(110):1-2.

[4] Natarajan C, Jendroszek A, Kumar A, et al. Molecular basis of hemoglobin adaptation in the high-flying bar-headed goose. PLoS Genet. 14(4):2-5.

[5] Randi MR, Bertozzi R, Santarossa C, et al. Prevalence and Causes of Anemia in Hospitalized Patients: Impact on Diseases Outcome. J. Clin. Med. 2020; 9:1-2.

[6] Chatterjee P. A study of prevalence of anemia along with its diagnosis and treatment. HematolTransfus Int J. 2018; 6(2):84-5.

[7] Soundarya N, Suganthi P. A review on anaemia – types, causes, symptoms and their treatments. JOSTI. 2016;1(1):10-16.

[8] Macić-Džanković A, Šubo A. Severe anemia: a case report. Journal of Health Sciences. 2011; 1(2):110-12.

[9] Busti F, Marchi G, Ugolini S, et al. Anemia and Iron Deficiency in Cancer Patients: Role of Iron Replacement Therapy. Pharmaceuticals. 2018; 11(94):1-2.

[10] Khanbhai M, Shah M, Cantanhede G, et al. The Problem of Anaemia in Patients with Colorectal Cancer. ISRN Hematology. 2014; 1.

[11] Edna TH, Karlsen V, Jullumstrø, et al. Prevalence of Anaemia at Diagnosis of Colorectal Cancer: Assessment of Associated Risk Factors. Hepato-Gastroenterology. 2012; 59:1-3.

[12] Väyrynen JP, Tuomisto A, Väyrynen SA, et al. Preoperative anemia in colorectal cancer: relationships with tumor characteristics, systemic inflammation, and survival. Sci Rep. 2018; 8(1126):2-3.

[13] Linda R, Ninda D. Differences in changes of hemoglobin between 6-12 hours and 12-14 hours after transfusion. Indonesian Journal of Clinical Pathology and Medical Laboratory. 2018; 24(2):108-9.

[14] Herawaty S, Senapathi TGA. Blood supply in emergency cases: A brief review. Bali Med J. 2019; 8(1):72-3.