

常見紅血球異常的診療進展

Recent development of diagnosis and management in common RBC disorders

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Disorder of red blood cell can be divided into anemia and polycythemia. The definition of anemia is low hemoglobin (<13 g/dL in men, and <12 g/dL in women). The causes of anemia are decreased production, increased destruction, and loss. The reasons for decreased erythropoiesis are nutrients deficiency, and bone marrow failure. The common nutrients deficiencies are iron deficiency, vit. B12 deficiency, and folate deficiency. For bone marrow failure, it could be aplastic anemia, pure red blood cell aplasia, myelodysplastic syndrome, and anemia of chronic disorders. For increased destruction, it could be intrinsic and extrinsic hemolytic anemia. The causes of intrinsic hemolytic anemia are membrane abnormalities, enzyme defects, and hemoglobinopathies. And the causes of extrinsic hemolytic anemia are immune-related hemolysis, and mechanical hemolysis. For polycythemia, it can be divided into reactive reaction and polycythemia vera.

Clinically, CBC/DC which provide 3 lineages information, can be a screen tool. It is useful to classify anemia into microcytic, macrocytic, and normocytic anemia clinically. Then, check reticulocyte, biochemistries, thyroid function, ferritin, vit. B12, folate, G6PD, LDH (lactate dehydrogenase), haptoglobin, Coombs test, EMA (eosin-5-maleimide) binding test, PNH (paroxysmal nocturnal hemoglobinuria) screen, ANA (anti-nuclear antibody), and even bone marrow studies, depend on clinical condition. For polycythemia, history taking plays an important role, then check EPO (erythropoietin) level, MPN (myeloproliferative neoplasms) gene mutations (JAK2 V617F, CALR type I & II, and MPL W515K & W515L), and bone marrow studies. For treatment, it depends on different diseases.