

Example: Anemia Syndrome Management Protocol

Problem Or Syndrome

Anemia

Causes To Consider

*Low MCV: Fe Deficiency, Chronic Disease, Thalassemia, Sideroblastic, Lead poisoning

*High MCV: B12/Folate Deficiency, Alcohol, Liver Disease, Myeloproliferative Disease; Consider Hemolysis and Hemorrhage if Increased Retic Count

*Normal MCV: Acute Blood Loss, Hemolytic Anemia, Renal Failure, Chronic Disease, Connective Tissue Disease, Marrow Infiltration/Fibrosis, Endocrine (such as Hypothyroidism)

Note: Reticulocyte is low in Renal Disease, Lead, Cancers, Chronic Disease, Bone Marrow Failure, Malaria, Nutritional deficiencies, HIV

History

Information about diet consumption, for example, may reveal clues about iron deficiency or vitamin deficiency. Understanding of family history may provide insight into potential familiar causes of anemia.

Physical Examination

Vital signs: temperature, pulse, and respiratory rate to assess clinical stability

General medical exam

Detailed Cardiac exam for signs of heart failure

Detailed Gastrointestinal exam for signs of blood loss

Laboratory And Imaging (Minimal access on these)

Basic evaluation including blood smear microscopy, CBC, Retic Count, Stool for O&P. Consider UA, Direct Coombs, Stool for Occult Blood, Peripheral Smear, Creatinine, Bone Marrow Biopsy depending on the likely causes and initial results.

Definitive Diagnostic Criteria

Differential diagnosis categorized by size of red blood cells and hemoglobin content on peripheral smear. Diagnostic testing guided by common causes within each category.

Example: Microcytic anemia is most often due to Iron Deficiency with Intestinal Helminth (hookworm), proven by presence of eggs in fresh stool

Example: Normocytic anemia in Africa is often due to hemolysis from Malaria, proven by presence of parasites in blood film

Treatment

Treat underlying cause.

If iron deficiency, give ferrous sulphate 200 mg one tablet BID or TID for two to three months.

If hemolytic anemia from malaria, give folic acid 5 mg daily for one month and iron as above.

Pregnant women should be supplemented with ferrous sulphate 200 mg PO QD, and folate 2.5 mg p.o. QD.

Transfusion is based on the level of Hemoglobin and the assessment of ongoing hemolysis or blood loss, and the hemodynamic condition. For stable patients with NO ongoing hemolysis or blood loss, consider transfusion at less than 5gm/dl Hgb. Transfuse at higher levels if vital signs or symptoms indicate.

Prevention

TEACH: Proper nutrition to prevent iron deficiency anemia's

Teach – Footwear to prevent hookworm.

Screening for anemia in pregnancy and intermittent presumptive therapy for malaria and helminthes.

See control strategies for other underlying causes.

Created by Paul Larson, MD, DTM&H, for Kapsowar Hospital, Kenya