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Lab with satellite control & bluetooth set up

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The World Health Organization (WHO) defines anemia as a hemoglobin <13 g/dl (hematocrit <39%) for adult males and <12 g/dl (hematocrit <36%) for adult non-pregnant females. The most commonly encountered disorders with hypochromic anemia are iron deficiency anemia and beta thalassemia trait. Other disorders to consider include anemia of chronic disease, lead toxicity and sideroblastic anemia. Iron deficiency anemia is the most common microcytic hypochromic anemia worldwide resulting from lack of sufficient iron to synthesize hemoglobin. Iron deficiency anemia in adults is caused by loss of blood, while in childhood faulty diet is to blame. It is a severe stage of iron shortage in which hemoglobin (or haematocrit) falls below normal range. Affected individuals show RBC morphological change of microcytosis, hypochromia, anisocytosis and poikilocytosis. Beta thalassemia trait (BTT) is an important differential diagnosis of iron deficiency anemia. Thalassemia is one of the main autosomal recessive hereditary hemoglobinopathies established within the world population mainly in Mediterranean belt, Far eastern and South East Asian international locations. Thalassemias are a collection of hemoglobinopathy due to genetic mutations of the hemoglobin (Hb) genes, ensuing in reduced production or total absence of 1 or more globin chains. Thalassemia includes two main classes, alpha thalassemia and beta thalassemia by the way of their clinical manifestations and genetic background. Beta thalassemia is the most frequent type of thalassemia which may be categorised in addition into 3 forms: β thalassemia major, β thalassemia intermediate and β thalassemia minor / β thalassemia trait. In developing countries like India where resources are limited, thalassemia is a major health burden. Earlier studies have shown that the overall prevalence of β -thalassemia is 3-4 % with an estimate of around 8,000 to 10,000 new births with major disease each year. Affected individuals show increased RBC count with morphological change of microcytic hypochromic with no polychromasia and presence of target cells. In the Indian population where the incidence of the beta thalassemia gene is 3-15% depending on the region, it is important to detect the thalassemia carrier and offer genetic counseling and screening of the spouse to prevent the birth of children with beta thalassemia major. Anemia of chronic disorders is a type of anemia associated with a variety of chronic inflammatory, infectious or neoplastic disorders. There is decreased red cells survival, inadequate marrow response, impaired iron mobilization and iron uptake by erythroid cells. The affected individual shows RBC morphological change of normocytic normochromic or microcytic hypochromic red cells and the reticulocyte count is decreased. The Sideroblastic Anemia is a refractory anemia with microcytic hypochromic red cells due to a defect in heme synthesis and the inability of mitochondria of developing red cells to incorporate iron into the heme molecule. There is a defect in heme synthesis and the iron transported to the mitochondria gets accumulated. The affected individual shows high degree of anemia with RBC morphological change of marked anisocytosis and poikilocytosis with appearance of microcytes, normocytic normochromic and target cells. Therefore, anemia in adults is a complex problem owing to variations in various haematological parameters. A complete physical examination should be done in case of anemia as failure to respond to iron therapy means that the person has another cause of anemia. Hence, this necessity needs to take up the study on haematological profile of hypochromic anemia.

Biography

Somil Singhal has completed his Bachelor of Medicine and Surgery (MBBS) at the age of 25 years of age from Beijing Medical University, China and Post Doctoral Studies in Doctor of Medicine In Pathology from Rajiv Gandhi University of Health Sciences, Bangalore, India. Currently, he is working as Pathologist in the Haematology Department at Maharaja Agrasen Group of Hospitals, New Delhi, India. He has attended various Conferences, CME's and published Case studies, Dissertations in reputed journals like IJLSSR, Index Copernicus, Poland Journal of Dermatology and is the life member of Indian Medical Association and Allahabad Medical Association. Besides this, he had worked as a resident in AIIMS Trauma Center in the department of emergency medicine, the Cardiac resident at Fortis Hospital Okhla, Delhi and attended various ITO and blood bank camps for service to the society.

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