Dedication

To the heart of my life, my family

To all teachers and colleagues

To those who are inside and outside Sudan
I dedicate this work

Acknowledgment

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Abstract

Sickle cell disease is a hereditary disorder common in Sudan usually in the west. It is one of the haemolytic anaemias that shortened the life of the red blood cells. Sickle cell shape occur due to polymerization of haemoglobin S which is present due to substitution of valine for glotamic acid at position 6 of the β-globin chain. Fetal haemoglobin (Haemoglobin F) is increased in sickle cell disease.

This study aimed to determine fetal haemoglobin (Haemoglobin F) level in patients with sickle cell disease and sickle cell trait The study carried out in 100 predetermined samples collected crossectionally in Kosti hospital during the period of September 2008 to March 2009. 90 samples were sickle cell disease and sickle cell trait and 10 samples were used as control.

The techniques used were ,Complete blood count (CBC) by sysmex hematological analyzer - Sickling test - The alkaline method for haemoglobin electrophoresis (cellulose acetate electrophoresis) – Estimation of haemoglobin F level by the Modified Betke Method.

The study showed that the mean level of haemoglobin F in patients with sickle cell disease receiving hydroxyurea was 21.98 % , and the level of Haemoglobin F in those who were not receiving hydroxyurea was 16.8 % while it was 1.5 % in sickle cell trait and 0.46 % in normal individuals.

الانيميا المنجلية مرض وراثى شائع فى السودان و فى غربه خاصة. هو واحد من الانيميات الانحلالية التى تؤدى الى قصر عمر خلايا الدم الحمراء. شكل الخلية المنجلى يظهر نتيجة لاستبدال حمض الفالين لحمض الجلوتاميك فى الموضع السادس لسلسلة - قلوبين. خضاب الدم الجنينى يزداد فى حالة الانيميا المنجلية.
هذه الدراسة تهدف الى قياس مستوى خضاب الدم الجنينى
لمرضى وحاملى مرض الانيميا المنجلية.
تمت الدراسة بجمع مائة عينة دم بمستشفى كوستى فى الفترة من سبتمبر 2008 الى مارس 2009 منها 90 عينة من مرضى الانيميا المنجلية وحاملى المرض و 10 عينات من الاصحاء اخذت كضابط.
التقنيات التى استخدمت هى : فحص الدم الكامل بواسطة جهاز ال Sysmex اختبار الانيميا المنجلية – الرحلان الهيموقلوبينى بواسطة Cellulose acetate electrophoresis قياس الهيموقلوبين الجنينى بواسطة Modified Betke Method.
اظهرت الدراسة ان متوسط مستوى الهيموقوبين تالجنينى فى مرضى الانيميا المنجلية الذين يتناولون هيدروكسى يوريا كانت 21.98 % ومستوى الهيموقوبين تالجنينى فى المرضى الذين لا يتناولون هيدروكسيوريا كانت 16.8 % حيث كانت 1.5 % فى حاملى المرض و 0.46 % فى الا صحاء

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