

Dedication

*To my Guarding Angel my husband
Dr. Amin who pave me long way with
advices and support.*

*To my beloved Parents who always
open their hearts for me, offer their love and
prayers.*

To my brothers who always support me.

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الخلاصة

هذه دراسة وصفية مقطعية هدفت لتحديد نسبة تردد الزمر الوظيفية و النمط الظاهري لأنظمة ABO, Rhesus (D) and Kell (K1, K2) في قبيلة الدينكا السودانية. هدفت الدراسة لتكوين قاعدة معلومات لهذه الزمر الوظيفية ومقارنتها مع القبائل السودانية قد استغرقت هذه الدراسة ثلاثة أشهر في الفترة من مارس الى مايو ٢٠٠٧. أخذت الموافقة من المتطوعين وقد تمت إحاطتهم بأهداف البحث. تم تجميع مائه عينه من أفراد القبيلة بحيث لا توجد بينهم صلة قرابة، تم سحب ٥ , ٢ مل من الدم ووضعها في وعاء يحتوى على مادة مانعه لتجلط الدم. تم اختبار جميع العينات لمعرفة الزمر الوظيفية لأنظمة ABO & Rhesus (D) بطريقة الشريحة . واختبار انتجينات Kell (K1 and K2) استخدمت طريقة حديثه تعرف Gel microtyping . تم تحليل البيانات بالحاسوب باستخدام برنامج Statistical package for social science و تم تحديد التشابه بين القبائل باستخدام قانون جاكرد للتشابه ، أظهرت النتائج أن الزمره الوظيفية O كانت الأكثر ترددا بين أفراد القبيلة بنسبه تردد (٤٨ %) تليها A (٢٣ %) ثم B (٢٠ %) وأخيرا AB (٩ %) كما تبين أن الزمره الوظيفية Rhesus (D) كانت بنسبه تردد (٩٦ %) ، بينما K2 كانت الأكثر ترددا بنسبه (١٠٠ %) ، بينما K1 كانت بأقل نسبه وهى (٥ %) . و قد خلصت الدراسة أن نسبة الزمرة الوظيفية ABO في قبيلة الدينكا اقرب للنسبة التي وجدت لدى الأمريكيين السود وابتعد ما تكون عن الأمريكيين البيض و البريطانيين. بينما Rhesus (D) اقرب للأمريكيين و الافارقة السود وابتعد ما يكون عن البريطانيين وكانت نسبة تردد K1 اقرب للباكستانيين و الفلبينيين وابتعد عن الأمريكيين السود و العرب بينما K2 كانت اقرب للباكستانيين و البريطانيين . التشابه بين بعض القبائل السودانية يرجع إلى عيشهم في مناطق قريبه من بعض ويعزى الاختلاف إلى طبيعتهم الترحالية .

Abstract

This was prospective and cross – sectional study that aimed to determine the frequency of ABO, Rhesus (D) and Kell (K1, K2) antigens and phenotypes among the Denka Sudanese tribe. Study also aimed to construct a data base regarding to these antigens. This study was conducted during three months (March – June 07) in Khartoum state. Following informed consent, a total of hundred individuals were bled. 2.5 ml of venous blood was collected into EDTA containers. All samples were tested for ABO, Rh (D) antigens by slide technique, whereas the Kell (K1 and K2) were tested by modern technique called gel micro-typing. The results were analyzed using statistical package for social science program. Similarities between this tribe and other Sudanese tribes and tribes from other countries were calculated using Jacard's coefficient similarities. Regarding to ABO blood group system our results showed that the O blood group was most common with the frequency of 48% followed by A blood group with the frequency of 23% and B blood group was 20% whereas the AB was the least common with frequency of 9% . Rhesus (D) antigen frequency was found to be most commonly frequent with the frequency of 96%. The Kell-2 frequency was found to be 100%, while Kell -1 was 5%. The conclusion of the study was that frequency of ABO blood group was found to be close to that found in people of African American race and far from that found in the American of the united state and the British populations while the frequency of Rhesus (D) antigen was found to be close to the frequency of American and African Blacks , and far away from that of British population , the frequency of Kell -1 in the Denka population was found to be close to that found in Pakistan and Finns population and it was far away from that found in U.S blacks and Arabian population and kell -2 was found close to Pakistani and English populations .Similarities between some Sudanese tribes could be explained by the same location while the differences may due to there wandering nature .

List of abbreviations

Name	Abbreviation
Arg	Arganine
CGD	Chronic granulomatous disease
cDNA	Cytoplasmic Deoxyribonucleic acid
C	Cytosine
Cys	Cysten
Del	Delition
DNA	Deoxyribonucleic acid
ECE	Endothelin-converting enzyme
EDTA	Ethyle diamine tetra acetic acid
ET	endothelin
Fue	Fucose
FGF	Fibroblast growth factor
Gal	Galactose
HTR	Hemolytic transfusion reaction
HDN	Hemolytic disease of newborn.
ID	Immuno-diffusion
IgG	Immunoglobulin G
IgM	Immunoglobulin M
IAT	Indirect antiglobulin test
ISBT	International society of blood transfusion
JS^a	KEL 6
JS^b	KEL 7
K-1	Kell-1
Kp^a	Kell-3
Kp^b	Kell-4
KD	Kilo Dalton
KP^c	KEL21
LISS	Low ionic strength solution
mRNA	Messenger Ribonucleic Acid
NEP	Neutral endopeptidase
PCR	Polymerase chain reaction
PET	Positron emission tomography
RAZ	KEL27
RBCs	Red blood cells
Rh	Rhesus blood group system
Rh (D)	Rhesus D antigen
SEP	Secreted endopeptidase
SPSS	Statistical Package for Social Science
T	Thymine
UK	United Kingdom
USA	United States of America
VLAN	KELL 25

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