

Dedication

-To my parents who enlighten my way with their passion,

golden wisdom, and blessings.

*-To my teachers who always offer an unlimited support and
help.*

*-To my brother and sisters who give me the courage,
strength and power to go forward in my career.*

-To my friends and students in the past, present, and future.

ACKNOWLEDGEMENTS

I would like to express my appreciation to my Supervisor **Dr. Malik Hassan**

Ibrahim Mustafa, Assistant Professor of hematology The head of the department of hematology of college of medical laboratory science of Sudan university for science and technology for his guidance and support during conduction of this study, , his keen supervision, valuable advice, and continuous encouragement to make this research possible, and his assistance through all stage of this work.

My special thanks are also extended to my colleagues **Zeinab, Sara**, for their help and encouragement. Also my thanks to my friends **Alaa Eldin** for his support. I am deeply indebted to my best friends **Adil, Jefara, Osama** for their help and advice. My best regards and thanks to **Dr. Tarig Elfatih Elmisbah, Mr. Abdelgadir Hag Elagib**, and **Mr. Mostafa Awad Salih, and Aida** for their participation in this study. **My appreciations to all those who helped me to realize the importance of this research.**

الخلاصة

هذه دراسة وصفية ، تحليلية أجريت في قبيلة الدنائلة السودانية هدفت لتحديد نسب تردد الأليل (الانتجين) ، والأنماط الظاهرية لنظام ABO و العامل الريضي . لقد استغرقت الدراسة ثلاثة شهور (من أبريل إلى يوليو، 2007). هدفت الدراسة لتكوين قاعدة معلومات لهذه القبيلة لتحديد مدى التداخل بينها وبين القبائل الأخرى بعد المقارنة. استخدمت الدراسة الزمرة الوظيفية للعامل الريضي كعلامات للهوية لتحديد الأصل المشترك المحتمل . أخذت الموافقة من الأشخاص الذين سحب منهم الدم وقد تم أحاطتهم بأهداف البحث. تم تجميع عينات من مائة شخص من القبيلة بحيث لا توجد بينهم صلة قرابة . تم تجميع كل عينة في وعاء سعة 2.5 مل يحتوى على مادة مانعة لتجलط الدم (EDTA). تم فحص جميع العينات لمعرفة الزمرة الوظيفية للعامل الريضي باستخدام طريقة الشريحة وعشرون عينة منها فحصت بطريقة تسمى جل (مانعة النفاذية) ومن ثم تم تحديد الزمرة الوظيفية و تحديد نسب التشابه بين هذه القبيلة و القبائل السودانية والدول الأخرى بواسطة قانون جاكرد للتشابه. وأظهرت نتائج الدراسة أن نسبة تردد الزمرة الوظيفية للدم التابعة لنظام ABO أن الزمرة الوظيفية O كانت الأكثر ترددًا بنسبة (50%) تليها A بنسبة (32%) ، ثم B بنسبة (14%) وقد كانت الزمرة الوظيفية AB هي الأقل ترددًا بنسبة (4%).

وفي نظام العامل الريضي تبين أن الزمرة الوظيفية c,e و D هي الأكثر ترددًا وقد كانت نسبها (91%) ، (99%) و (91%) على التوالي . وقد كانت الزمرة الوظيفية E، C هي الأقل ترددًا بنسبة 52%، 2% على التوالي.

نجد أن هنالك تشابه في الزمرة الوظيفية لنظام ABO ونظام العامل الريضي بين القبائل السودانية التي تعيش في منطقة جغرافية واحدة وهذا قد يكون بسبب التزاوج بين تلك القبائل، وأن الاختلاف الذي وجد في بعض القبائل السودانية يمكن أن يكون بسبب الترحال وعدم التقيد بمنطقة جغرافية محدودة.

Abstract

This is a prospective and analytical study, aimed to determine the frequency of ABO, Rh antigen, and phenotypes, among Danagla Sudanese tribe. Also the study aimed at establishing ABO, Rh blood group baseline data for this Sudanese tribe to determine the interaction between this tribe and other Sudanese tribes which will be useful in the blood transfusion.

The study was conducted during three months (April to July, 2007), Following informed consent, a total of hundred venous blood samples were collected from unrelated individual into 2.5 ml EDTA containers. All samples were tested for ABO and for common Rhesus antigens using the slide agglutination techniques, and twenty samples were tested by immune-diffusion gel technique. The antigens and phenotypes were determined. Similarities between this tribe and other Sudanese tribes and with other countries were calculated using Jaccard's coefficient of similarities.

The results obtained showed that, The O group was most common frequently occurred (50%), followed by group A (32%), group B was found (14%) and least common was group AB (4%).

The e, c, and the D antigens were the commonest alleles detected with frequencies of 99%, 91% and 91% respectively. The C and the E antigens were the least frequent with 52% and 2% frequencies respectively.

There was a marked similarities between the Sudanese tribes that lived in same geographical area this could be due to intermarriage , while the difference that seen in some tribes could be most probably due to the wandering nature of these tribes.

List of abbreviations

Ab: Antibody.

AE1: Anion exchanger.

Ag: Antigen.

AIHA: Autoimmune hemolytic anemia.

Appro: Approximately.

cDNA: Complementary Deoxyribonucleic acid.

CHO: Carbohydrates.

CML: Chronic myeloid leukemia.

DNA: Deoxyribonucleic acid

Fy Ag: Duffy associated glycoprotein.

GPB: Glycoprotein-B.

H-chain: Heavy chain.

HDN: Hemolytic Disease of The Newborn.

ID: Immunodiffusion.

IgA: Immunoglobulin A.

IgD: Immunoglobulin D.

IgE: Immunoglobulin E.

IgG: Immunoglobulin G.

IgM: Immunoglobulin M.

ISBT: International Society of Blood Transfusion.

L-Chain: Light chain.

Le: Lewis.

Lu: Lutheran.

LW: Landsteiner and Wiener.

mRNA: Messenger ribonucleic acid.

PCR: Polymerase Chain Reaction.

RBC: Red blood corpuscle.

Rh Ag: Rhesus associated glycoproteins.

Rh: Rhesus blood group system.

RNA: Ribonucleic acid.

SGP: Sialoglycoprotein.

UK: United Kingdom.

VH: Variable heavy.

VL: Variable light.

WHO: World Health Organization.

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