

Dedications

I would like to dedicate this research to my dear father, to my beloved, kind mother and my dear, kind respectively son (hamoudi).and my wife (Aamnah)

Special thanks to them for ever success I arrive to, because they do help, care and stand with me in every successful step in my life.

Acknowledgement

Special thanks to my supervisor Dr. Mohamed Siddig who has provided me with all program needed for this study as well as sufficient aid support in finishing this project.

In particular, I would like to thank my tribe member who encouraged me to rely my dream.

Thanks are for.

My relatives, friends and every bodies whom I love.

Abstract

The study was carried out among Guraan tribe in El Khartoum state to determine the frequencies of ABO and Kell phenotypes .

Hundred samples were collected from unrelated donors of Guraan individuals , investigated by direct agglutination technique for ABO system screening and by gel immunodiffusion technique to detect Kell system phenotypes .

Data were analysed by the computer using SPSS program .

The frequency of group A blood was 36% , B22% , O37% and group AB blood was 5% .

The frequency of Kell – 1 (K1) was found to be 2% and Kell 2 (K2) was 100% .

The study showed that there is no statistically significant association between the occurrence of Kell phenotypes (K1 – K2) and gender , as well as phenotype of ABO blood group .

It was concluded all Guraan patients and donors should be screened for Kell blood group phenotypes as part of compatibility testing before transfusion .

ملخص البحث

أجريت هذه الدراسة في قبيلة القرعان بولاية الخرطوم لتحديد نسبة الانتجينات المختلفة في نظامي فصائل الدم الأساسية (ABO) و (Kell) في الأشخاص الأصحاء ظاهرياً . تم جمع 100 عينة من الدم الوريدي من الجنسين (71 ذكور / 29 إناث) لا يرتبطون بصلة قرابة من قبيلة القرعان تم فحصها وتحليلها باستخدام مضادات الأمصال لنظام ABO ونظام Kell . تم إدخال المعلومات والنتائج في الكمبيوتر وتحليلها باستخدام نظام التحليل الإحصائي SPSS . أظهرت النتائج المتحصلة في الدراسة :
نسبة الانتجين 36% AB ، 5% B ، 22% A ، و 37% O ونسبة 2% k1 و 100% k2 .
وقد اثبتت الدراسة انه لا توجد علاقة ذات دلالة إحصائية بين توريث الانتجينات لنظام kell وتوريث الانتجينات لنظام ABO كما لا توجد فرق توزيع الانتجينات بين الذكور والإناث .

List of Contents

No	Subject	Page
1	Dedication	I
2	Acknowledgment	II
3	Abstract	II
4	Abstract in Arabic	IV
5	List of Contents	V
6	List of Tables	VI
7	List of Figures	VII
8	Chapter One Introduction	1
9	Rational	3
10	Objectives	4
11	Literature Review	5
12	Chapter Two Material and Method	36
13	Chapter Three Result	41
14	Chapter Four Discussion	46
15	Chapter Five Conclusion and recommendation	48
16	Chapter Six References	49
17	Appendix	51

List of Tables

Table No	Title	Page
1	Antiges and antibodies content of the red blood cell and serum of the Four ABO groups.	6
2	Antigen of the Kell blood group system nomenclatures	11
3	The phenotypes frequency of the common Kell antigens	13
4	The characteristics of Kell antibodies	32
5	The correlation between ABO blood phenotype and gender	45
6	The correlation between Kell blood group system phenotype and gender	45
7	The correlation between ABO and Kell blood group system phenotype.	45

List of Figures

Figures No	Title	Page
1	The Gender of Al Guraan tribe individuals.	42
2	Frequencies of ABO blood group systems Phenotypes in Al Guraan ethnic group.	43
3	Frequencies of Kell blood group systems Phenotypes among Al Guraan Ethnic group	44