

Declaration

I declare that this research is my own work and it has not been submitted to any other University for any kind of degree.

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ABSTRACT

The importance of ABO blood group system in blood transfusion lies in the frequency of its antibodies and in the possibility that such antibodies will destroy incompatible cells *in vivo*. The ABO system was the first to be recognized and remain the most important.

Kell is one of the important blood group system on human erythrocyte. Antibodies to Kell antigen are immune in nature, and are cause sever hemolytic reaction if incompatible blood is transfused, also it can cause hemolytic disease of new born.

This study aimed at determining the frequency of ABO, Kell 1 and Kell 2 phenotype in Bunni Ammer population.

The study was carried out 100 predetermined random samples from Bunni Ammer tribe and the grand father has one chance to be included in the study. Samples were tested for the presence of ABO using slide method and for K 1 and K 2 using ID-Gel Micro typing system which contain coated anti-K 1 and anti- K 2 antisera.

The samples were collected form Kasala town. Result was showing that : The frequency of ABO, A blood group was found to be 19%, B was 21%, AB was 2% and O was found to be 58%. Kell 1 was found to be 1%, while Kell 2 was found to be 99%.

الخلاصة

إن أهمية نظام فصيلة الدم من النوع ABO في عملية نقل دم ناتج من أن الأجسام المضادة المكونة لهذا النظام لها الإمكانية علي تكسير الخلايا الغير متجانسة داخل الجسم . نظام ABO هو أول نظام تم اكتشافه وما زال هو النظام الأهم .

تعتبر فصيلة الدم من نوع Kell واحدة من فصائل الدم المهمة التي توجد داخل الكريات الحمراء في دم الإنسان .

الأجسام المضادة لفصيلة الدم Kell من النوع المناعي وهي تسبب التحلل الدموي الحاد نقل الدم الغير متجانس وكذلك تسبب مرض التحلل الدموي في حالة الأطفال حديثي الولادة .

هدفت هذه الدراسة إلي تحديد نسبة وجود أنتجينات هذه الفصيلة من النوع ABO و Kell 1 و Kell 2 في قبيلة البني عامر .

تم جمع العينات من مائة شخص من قبيلة البني عامر بحيث مثل الجد بفرصة واحدة في الدراسة . وقد تم جمع

العينات من مدينة كسلا وقد تم اختبار كل العينات ، ABO بـ Slide method و Kell بطريقة

الهلام

(ID-Micro typing System) وهي تحتوي علي الأجسام المضادة

لكل من Kell 1 و Kell 2 .

وكانت النتيجة علي النحو التالي ، B (21%) ، A (19%)
O (58%) ، و(2%) Kell 2 (99%) ، AB . kell 1 (1%) .

Dedication

**To the heart of my life,
my parents. To my
brothers and sisters, to
my teachers and
colleagues. I dedicate this
work.**

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List of Abbreviation

Abbreviation	Meaning
HDN	Hemolytic disease of newborn
KD	Kilo Dalton
K 1	Kell 1
Rh	Rhesus
USA	United state of America
EDTA	Ethyle diamine tetra acetic acid
SPSS	Statistical package for Social Science
mRNA	Messenger Ribo nucleic Acid
UK	United Kingdom
IgM	Immunoglobulin M
Fuc	Fucose
Gal	Galactose
DNA	Deoxy ribo nucleic Acid
cDNA	Cytoplasmic Deoxyribonucleic Acid
PCR	Polymerase chain reaction
K0	Kell null
RBCs	Red blood cells
LISS	Low ionic strength solution
IAT	Indirect antiglobulin test
ID	Immunodiffusion