



وزارة التعليم العالي والبحث العلمي
جامعة بابل
كلية العلوم للبنات

The influence of blood types differences
on infection with COVID-19 in
Young person

بحث تخرج مقدم إلى مجلس كلية العلوم للبنات/جامعة بابل
كجزء من متطلبات نيل شهادة البكالوريوس في علوم الحياة

تقدمت به الطالبتين

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المرحلة الرابعة

كلية العلوم للبنات/ قسم علوم الحياة

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

(مَنْ يَتَّقِ اللَّهَ يَجْعَلْ لَهُ مَخْرَجًا* وَيَرْزُقْهُ مِنْ

حَيْثُ لَا يَحْتَسِبُ وَمَنْ يَتَوَكَّلْ عَلَى اللَّهِ فَهُوَ

حَسْبُهُ إِنَّ اللَّهَ بَالِغُ أَمْرِهِ قَدْ جَعَلَ اللَّهُ لِكُلِّ شَيْءٍ

قَدْرًا)

صدق الله العلي العظيم

سورة الطلاق

الآيه ٢_٣

شكر وتقدير

بداية اود ان أحنى رأسي أمام الله العظيم القدير
الرحيم الأكثر نفعًا كما أنعم علي بمثل هذه النعمة
واوصلني الى ماأنا عليه اليوم, ثم اتقدم بالشكر
والتقدير والاحترام الى اعظم انسان في الكون الرسول
الكريم محمد (صلى الله عليه وآله وسلم) الذي تعتبر
حياته وكلماته المصدر النهائي للتوجيه وطريقة
"النجاة" للبشرية.

أود أن أعبر عن امتناني العميق والصادق الى
مشرفتي الدكتورة نوران جميل لتقديمها التوجيه
والإلهام والإشراف والدعم المعنوي القيم من المرحلة
المبكرة جدًا حتى نهاية بحثي.
وأعبر عن خالص امتناني لعمادة كلية العلوم للبنات و
رئاسة قسم علوم الحياة ولجميع الاساتذة منذ المرحلة
الاولى ولغاية المرحلة الرابعة

نور قاسم حسن

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الإهداء

الى مقام الامام صاحب العصور و
الزمان

إلى أبي وأمي العزيزين مع حبي
وتقديري

إلى أي شخص يساعدي ويرى أنا
أستحق ذلك

Summary

Aim of this study to investigate the ABO blood group distribution and prediction role of the blood group type in susceptibility to (COVID_19) disease , this study was conducted between October 2022- 2023 May in college of science for women included 267 individuals their age arranged between 25_35 years who free from any chronic disease, subgroup according to their infected or non with corona virus, our finding was an increase in the subjects with blood groups A and B ,AB. while decrease in number person with blood group O. our study has found that having blood group O may be protective.

Introduction

In December 2019, a new type of Corona Virus was discovered in Wuhan province, china, causing a condition of severe respiratory failure called covid- 19 (1). The general blood group system called ABO discovered by Landsteiner is a kind of cell identity system determined by the antigenic structure Located on the erythrocyte surface (2).

Blood group antigens are genetically encoded and these antigens may be a predisposing factor for some disease and protective factor for some others (3). By examine the relationship of the human blood group with virus infection, this study had been done.

Materials and Methods

This study conducted at college of Science for Women between October 2022_May 2023 included 267 Subjects who free any disease some of their registered positive to corona virus but another were non-infected with the same virus were their age between 25_35 years, the results was analyzed By chi-square test used for comparison of categorical data. ($P < 0.05$) was considered significant.

A small glass slide prepared to get the sample blood from all study population after the slide were prepared put three points of blood on one of the anti-A, anti-B and anti-D separately, the agglutination or blood clumping pattern can be visually observed to ABO type be determined (4).

Results and discussion

Distribution of blood group among Subjects showed in Table 1:

Blood group	Number	Percent %
A	88	32.95
B	22	8.23
AB	23	8.61
O	134	50.18
Total	267	100%

Distribution of blood group among Subjects of study according to infected or non-infected with corona virus recorded in

Table 2:

Blood group	Infected percentage	Non_infected percentage	Chi-square P-value
A	68(% 77.3)	20(% 22.7)	
B	16(% 72.7)	6(%27.3)	61.5
AB	15(% 65.2)	8(%34.8)	P-value 0.000
O	36(% 26.9)	98(% 73.1)	

It was found that subjects with blood group A and B and AB had a higher COVID_19 infection rate as compared to person with blood group O, these finding suggests that blood O may provide protection against the infection

The ABO blood group system basically contains A and B antigens and their corresponding antibodies (6). In fact, it was known that anti-A antibodies block the adhesion of SARS- COVs protein to ACE2 expressing cell lines (5), so the differences in blood group antigens expression may increase or decrease host susceptibility to many infection, blood group antigens can play a direct role in infection by serving as receptors and/or cofactors for microorganism, parasites and viruses, in addition many blood group antigens facilitate intracellular uptake or cell adhesion through the organization of membrane micro domains(7).

In line with finding from Iraq ,studies from turkey, Lebanon, China also demonstrated that person with group A represented the highest proportion of COVID_19 positive cases, and O type have lowest number(8)

Conclusion

Our study found the frequency of blood group A was higher and the blood group O was lower infected.

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