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FREQUENCY OF ABO BLOOD GROUPS IN NORMAL VERSUS POST MENOPAUSAL WOMEN IN HYDERABAD, PAKISTAN

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J.W designed the experiment B.F collected the samples L.A.C analyzed the data F.G.B complied the data N.M.B performed the experiment.

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ABSTRACT

After discovering the genetic differences among humans in blood typing, pioneered by Landsteiner in 1901, the burgeoning importance to find out frequency of blood typing in different nationalities as well as in different times can not be denied due to its importance with the especial reference to disease transmission through blood and in banking/transfusion. Different types of blood are associated with different diseases. The aim of the study is thus to find out the frequency of blood typing in normal menstruating and post menopausal women as well as whether the menstrual status could cause a different frequency. To this end a cross sectional study was performed. The sample size (n) was 181, the age (range) of the participants were 40-60years. The prevalence of blood groups in normal menstruating versus menopausal female was found 12.7% and 11.0% in A blood typing, 19.9% and 18.8% in B blood typing, 3.3%and 6.1% in AB Blood typing and 13.8% and 14.3% in blood type O. Rh positive in normal female was 46.4% and 49.2% in menopausal women whereas Prevalence of Rh negative was 3.3% and 1.1%.The study shows the prevalence of blood typing in aforementioned groups and their possible association.

1. INTRODUCTION

The researchers are trying to establish a link in between blood typing and increased susceptibility to disease or some genetic trends even some habits in human. The frequency of AB and A blood group was found higher in diabetes Type -1 and Type-2 respectively, moreover Rhesus (Rh) negative was reported more in diabetes [1] whereas blood grouping is also associated with gastrointestinal bleeding and ulcer[2] it is also studied by some researchers that ABO blood type is directly associated with prevalence of hypertension, hypercholesterolemia [3]and cardiac disorders[4] researchers found the likelihood of negative impact of blood type on fertility of women, blood group O appears to be associated with decreased ovarian reserved[5], moreover ABO blood group gene is also linked with menstrual disorders in young females [6].

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The present study thus explored the prevalence of ABO and/or Rhesus blood typing and whether the menopausal status impacts on the frequency of blood typing. To this end, the participants were divided into normal menstruating and menopausal groups and the blood typing was done.

2. MATERIALS AND METHODS

One hundred and eighty one (n=181) volunteers were enrolled in this survey and/or an experimental study in certain and fixed period of time (June 2018 to November 2018(06 months). The sample was collected from different areas of district Hyderabad, Pakistan by having prior consent in a written form. The range of age was 40-60 years. The sample comprises of single as well as married women. The sample was divided into those who were having normal menstrual flow [7] and those women who

were missing their last 12 periods were considered as on menopause[8].
ABO and Rh blood typing was carried out by antigen-antibody reaction (Agglutination reaction) test by using standard antisera A, Anti sera B and anti sera D (Rapid Labs UK). The blood typing was performed twice with the same sample in order to minimize the error.

Statistical Analysis:
Data are shown as proportions and percentages; n indicates the number of women investigated. *P* values were taken by calculating fisher' s exact Test.

3. RESULTS

The study is indicating the current prevalence of frequency of blood grouping in normal menstruating as well as in menopausal women. As illustrated in table.1; the frequency of Rh+ blood group in normal women was 46% and in those who were on menopause was 49%. The frequency of Rh – was 3.3% and 1.1% respectively in normal menstruating and in menopausal women. However the distribution of Rhesus blood group could not be correlated with menstrual/menopausal status of women.
As shown in table.2; The Blood group B is the most frequent allele (38.7%) followed by O (28%), A (23.7%) and AB (9.4%) respectively. The frequency of A, B, AB and O allele was 12.7%, 19.9%, 3.3% and 13.8% in normal menstruating women whereas; The frequency of A, B, AB and O allele was 11%, 18.8%, 6.1% and 14.3% in those women who were on menopause, however the aforementioned groups are somehow similar in proportion hence the menstrual status can not be associated with the peculiar blood grouping.

Table. 1: Rehsus (Rh) blood groups of normal menstruating versus menopausal women.

	Normal	**Menopausal**	**Total**	***p*-value**
Rh(+)	84 (46.4%)	89 (49.2%)	173 (95.6%)	
Rh(-)	06 (3.3%)	02 (1.1%)	08 (4.4%)	0.1
Total	90 (49.7%)	91 (50.3%)	181 (100%)	

Table. 2: The distribution of ABO blood groups in normal menstruating versus menopausal women.

	Normal	**Menopausal**	**Total**	***p*-value**
A	23 (12.7%)	20 (11.0%)	43 (23.7%)	0.6
B	36 (19.9%)	34 (18.8%)	70 (38.7%)	
AB	6 (3.3%)	11 (6.1%)	17 (9.4%)	
O	25 (13.8%)	26 (14.3%)	51 (28.2%)	
Total	90 (49.7%)	91 (50.3%)	181 (100%)	

4. DISCUSSION

In this study, the prevalence of blood groups in normal menstruating versus menopausal female was found 12.7% and 11.0% in A blood typing, 19.9% and 18.8% in B blood typing, 3.3%and 6.1% in AB Blood typing and 13.8% and 14.3% in blood type O. Rh positive in normal female was 46.4% and 49.2% in menopausal women whereas Prevalence of Rh negative was 3.3% and 1.1%. The trend in blood typing was B>O>A>AB in both groups. Hence the study could not show any association in blood typing with the menstruating and/or normal menstruating status of participant; however it shows the current prevalence of blood typing in both groups. The overall prevalence of Rh positive in female was found higher than the study conducted previously in Pakistan [9].

The frequencies of ABO and Rh blood type vary throughout the world, interestingly different frequencies were found in different areas of Pakistan because of the multiethnic/multi racial background of people [10-12]. Post menopausal women have higher level of Total cholesterol, LDL (Low Density lipid) , Triglycerides and significantly less HDL (High Density Lipid) [13] ,While Blood group A has higher cholesterol level than group B in women who had passed their menopause [14] moreover increased lipid profile is associated with the onset of depressive symptoms and menopausal symptom severity [15], thus in theory the menopause pool of the women could possibly have the different frequency of blood typing; nonetheless the study could not conclude any difference in two above mentioned groups. One of the logical reasons could be the small number of sample size. So a giant cross sectional survey is required in order to find the association of blood typing with the early/late onset of menopause.

5. CONCLUSION

The study concludes the current prevalence of ABO typing in menopause and in those were having normal menstrual cycle in district Hyderabad, Pakistan. The study could not find any difference in aforementioned groups with the reference to menstrual/menopausal status of participants. Thus the information could have the possible implications in menopausal status of women as well as the in banking and transfusion of blood.

6. CONFLICT OF INTEREST

It is declared that the collaborators of this work have no any conflict of interests and they have nothing to disclose.

7. ETHICAL APPROVAL

All the experimentation for blood typing were done in accordance with 1964, Helsinki Declaration and its later amendments.

REFRENCES

[1] C. Oner, B. Dogan, B. Telatar, C.F.C. Yagan and A. Oguz, "Frequency of ABO/Rhesus Blood Groups in Patients with Diabetes Mellitus," J Coll Physicians Surg Pak, 26(1), pp. 74-5, 2016.

[2] K. Bayan, Y. Tuzun, S. Yilmaz, M. Dursun and F. Canoruc, "Clarifying the relationship between ABO/Rhesus blood group antigens and upper gastrointestinal bleeding," Dig Dis Sci, vol. 54(5), pp. 1029-34, 2009.

[3] Jassim, W. Association of ABO blood group in Iraqis with hypercholesterolaemia, hypertension and diabetes mellitus," Eastern Mediterranean Health Journal, vol. 18(8), pp. 888-891, 2012.

[4] C. Carpeggiani, M. Coceani, P. Landi, C. Michelassi, A. L'abbate, "ABO blood group alleles: A risk factor for coronary artery disease. An angiographic study," Atherosclerosis, vol. 211(2), pp. 461-466, 2010.

[5] E.J. Nejat, S. Jindal, D. Berger, E. Buyuk M. Lalioti, L. Pal, "Implications of blood type for ovarian reserve," Human reproduction, vol. 26(9), pp. 2513-2517, 2011.

[6] Y. Su, G.L. Kong, Y.L. Su, Y. Zhou, L.F. Lv, Q. Wang, B.P. Huang, R.Z. Zheng, Q. Z. Li, H.J. Yuan and Z.G. Zhao, "Association of gene polymorphisms in ABO blood group chromosomal regions and menstrual disorders," Experimental and therapeutic medicine, vol. **9**(6), pp. 2325-2330, 2015.

[7] J.A. Maybin, and H.O. Critchley, "Menstrual physiology: implications for endometrial pathology and beyond," Human reproduction update, vol. 21(6), pp. 748-761, 2015.

[8] Organization, W.H., Research on the menopause in the 1990s: report of a WHO scientific group. 1996.

[9] I.D. Khattak, T.M. Khan, P. Khan, S.M. Shah, S.T. Khattak, A. Ali, "Frequency of ABO and Rhesus blood groups in District Swat, Pakistan," J Ayub Med Coll Abbottabad," vol. 20(4), pp. 127-129, 2008.

[10] M.S. Khan, N. Farooq, N. Qamar, F. Tahir, F. Subhan, B.M. Kazi, M. Fiyaz, K.A. Karamat, "Trend of blood groups and Rh factor in the twin cities of Rawalpindi and Islamabad," Journal Pakistan Medical Association, vol. 56(7), pp. 299, 2006.

[11] A. Hammed, W. Hussain, J. Ahmed, F. Rabbi and J.A. Qureshi**,** "Prevalence of phenotypes and Genes of ABO and Rhesus (Rh) blood groups in Faisalabad, Pakistan," Pak J Biol Sci, vol. **5**(6), pp. 722-724, 2002.

[12] M.S. Khan, F. Subhan, F. Tahir, B.M. Kazi, A.S. Dil, S. Sultan, "Prevalence of blood groups and Rh factor in Bannu region NWFP (Pakistan)," Pak J Med Res., vol. 43(1), pp. 8-10, 2004.

[13] J.C. Stevenson, D. Crook and I.F. Godsland, "Influence of age and menopause on serum lipids and lipoproteins in healthy women," Atherosclerosis, vol. 98(1), pp. 83-90, 1993.

[14] L. Hagerup, P.F. Hansen and F. Skov, "Serum-cholesterol, serum-triglyceride and ABO blood groups in a population of 50-year-old Danish men and women," American journal of epidemiology, vol. 95(2), pp. 99-103, 1972.

[15] C. Kaya, H. Cengiz, A. Yesil, M. Ekin, L. Yasar, "The relation among steroid hormone levels, lipid profile and menopausal symptom severity," J Psychosom Obstet Gynaecol, vol. 38(4), pp. 284-291, 2017.