THE MYSTERY BETWEEN BLOOD GROUP AND EPISTAXIS

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Abstract

Objective :
The study has been attempted to show the relationship between blood group and occurrence of nasal bleeding. This will help to raise awareness regarding the prevalence of blood group in the patients with epistaxis among treating professionals.

Material and Methods :
A prospective study was done includcty 120 patient visiting Kathmandu Medical College (KMC), emergency, ENT Out - patient clinic or patients in wards with manifestation of nasal bleeding over a period of one year. Control were those patient who were admited for any surgical procedure in ENT without history of nasal bleeding.

Results:
In patients with epistaxis blood group O was most common (45%) followed by B(25%) then A (15%)and AB(15%).Control group showed group O(35%)and A (35%) equal in number followed by group B (23.33%)and group AB(6.66%). Thus expression of blood group O in patients with epistaxis was significantly more than the control group.

Conclusions:
The conclusion is that Blood Group O is over expressed in patients with epistaxis in comparison to the control population, raising the possibility of blood group O being the risk factor for epistaxis.

Keywords: Blood group O, Epistaxis, Von Willebrand factor.

Introduction
Epistaxis is one of the most common emergencies in ENT practice and a very difficult problem to tackle especially in Primary Health Centers or Health Posts in rural areas of our country.[1] Epistaxis is not a diagnosis. It is just a manifestation of underlying disease or condition. Sometimes it can be as severe as to threaten the life of the person. Many intervention and blood transfusion has to be done in such situations. The study has attempted to show the relationship between blood group and occurrence of nasal bleeding. This will help to raise the index of suspicion regarding blood group prevalence in patients with epistaxis among treating professionals.

Methods
This was a prospective, comparative study conducted in Kathmandu Medical College over a period of one year (July 2014 to June 2015). Ethical clearance was taken from Institutional Review Committee of KMC. All the patients with epistaxis attending Kathmandu Medical College in emergency, ENT outpatient or referred patients in the study duration were taken as cases. Controls were the patients posted for any surgical procedure in ENT without any history of nasal bleeding. Blood tests for blood grouping for control and case were done by using standard slide method using Anti A, Anti B and Anti D taken on glass slides. SPSS Vs 20 was used for analysis and p value and Chi square test were done for the interpretation of results.

Results
During the period of study 120 patients were taken, sixty as case and sixty as control. Blood group distribution in patients with epistaxis revealed Group O as the commonest group followed by Group B (Figure 1). In control group, Group A and Group O had equal patients followed by Group B and Group AB had least number (Figure 2).

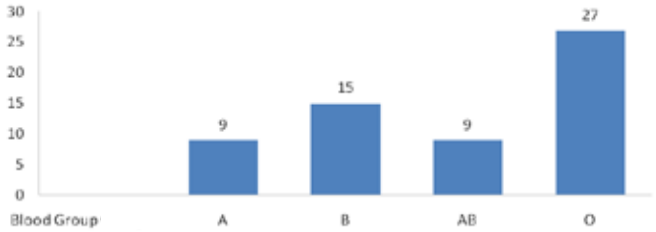

Figure 1. Distribution of blood group among the patients with epistaxis

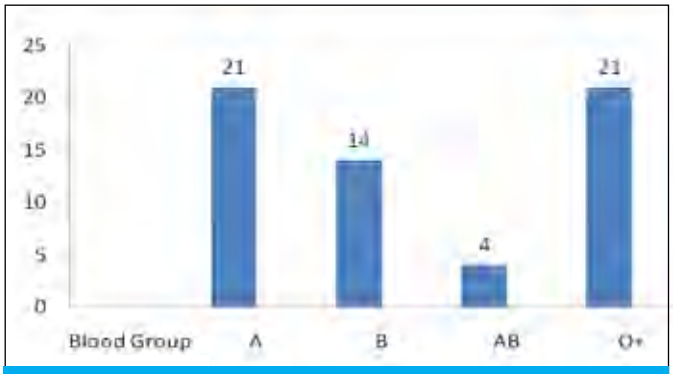

Figure 2.Distribution of blood group among the control group.

The result shows that Blood Group O is the commonest that is 45% (n=60) in patients with epistaxis followed by Group B(25%), Group A (15%) and AB(15%). The commonest blood group in control population is Group O and Group A that is 35% (n=60). Followed by Group B (23.33%) and least in Group AB (6.66%) (Figure 3). The p value is 0.057 which is not significant but the pecentage of representation of Blood Group O is more than that in control group.(Table 1,Table 2)

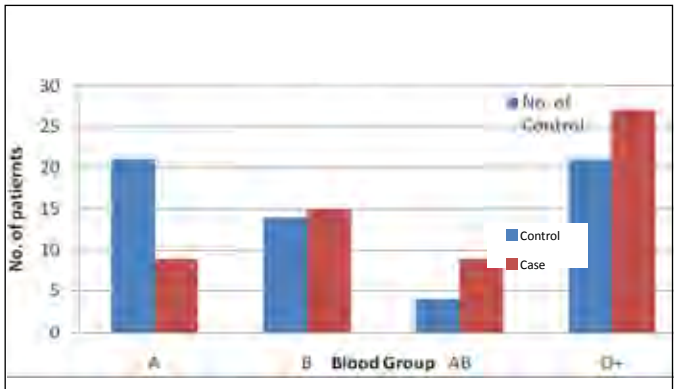

Figure 3.Comparison of blood group among the case and the control group.

Table 1. Cross tabulation of Blood group Non O and O in cases and control group.

			Epistaxis		Total
			Case	Control	
Blood Group	Non 'O'	Number	33	39	72
		% within Blood Group	45.8%	54.2%	100.0%
	'O'	Number	27	21	48
		% within Blood Group	56.2%	43.8%	100.0%
Total		Number	60	60	120
		% within bloodgroup	50.0%	50.0%	100.0%

P-value=0.264

Table 2. Chi square test showing the relation between epistaxis in blood group O and Non O.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.508a	3	.057
Likelihood Ratio	7.697	3	.053
N of Valid Cases	120		

Among the patients with epistaxis, 60% were male (n=60) and 40% were female (n=60). Similarly, in the control group, 58% were male (n=60) and 42% were female. It revealed a similar pattern of distribution in both groups.

Regarding age distribution, patients with epistaxis were maximum in age group 21 to 30 years (Figure 4) which was similar in control group as well (Figure 5).

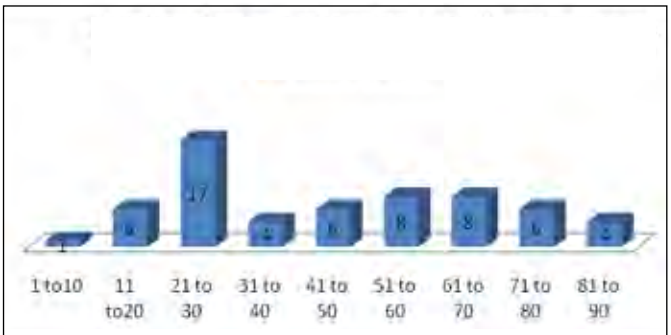

Fig 4. Age distribution of people with Epistaxis.

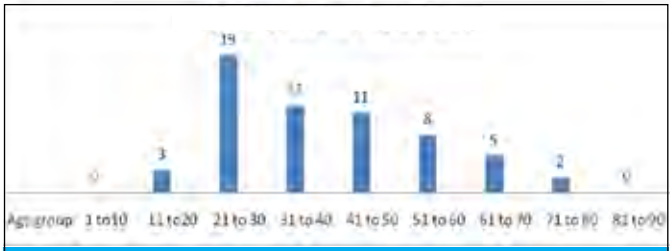

Figure 5. Age distribution of the control group

Discussion

Epistaxis is one of the commonest emergencies in all over the world. Proper and prompt management of which can save many a lives. Karl Landsteiner in 1901identified ABO blood grouping system. There are certain diseases which has been proved to have certain relation with blood group.[2] Micro-angiopathic hemolyticanemia has strong relation with Non O blood groups, making them a risk factor for this group of disease.[3] Venous throm-

boembolism and ischemic stroke is seen in blood groups A and AB.[4] In another study it showed that von willebrand factor plays a major role in clotting mechanism so higher risk of deep vein thrombosis in individuals belonging to blood group Non O is seen due to higher level of this factor.[5] Non A group is also associated with high risk of Cerebrovascular accidents.[6] Blood group AB has been found to have significant association with preeclampsia with an increased risk of 2.1 folds.[7] Protection against falciparum malaria by reduction of rosette formation is seen in blood group O.[8] Some studies suggest an association of blood group with malignancies. A positive correlation has been seen with blood group B and ovarian cancer[9] and blood group A with chronic hepatitis infection and pancreatic cancer.[10] There is a relation between peptic ulcers, gastric cancers and type of blood group[11] which makes the study of the relation between blood group and epistaxis very interesting.

In the study both case and control groups have similar sex distribution (Figure 1, 2) and second to third decades were the age groups most commonly visiting hospital for epistaxis as well as other health problems (Figure 3,4). The significant number of patients with epistaxis belonged to blood group O+ as compared to other blood group as seen in this study which is similar to a study done by Adhikari P et al.[1] This was also in agreement with the relation seen in the findings of Reddy et al.[12] It also showed that group O Caucasian patients with epistaxis was significantly higher (50.4%) compared to control population (45.1%). Similarly a longer bleeding time was demonstrated in patients with blood O, compared to non O groups in yet another study done by Caekebeke-Peerlinck et al.[13] Blood grouping is done by the presence of antigenic property of red blood cells (RBC), the presence or absence of which divides it into A, B, AB and O types. The RBC membrane contains about 30 different types of blood group antigens and the most important are A and B antigens. These antigens are complex oligosaccharides which differ in their terminal sugars. According to the presence of these antigens and antibodies blood is divided into four major groups called A, B, AB and O. Human red cell contains another important antigen called antigen D. Red cell containing this antigen are grouped as Rh positive and those which do not have this, are Rh negative.[14] Blood group O is associated with a lower expression of von Willebrand factor and factor VIII and Calcium in the final stage of intrinsic pathway which activate Factor X of common pathway.[15] VWF carries FVIII and prevents its inactivation. The release of factor VIII is via thrombin which participates in the coagulation cascade. VWF also recruits platelets at the site of clot formation during hemostasis.[16]

Conclusion:

Thus we conclude that Blood Group O is over expressed in patients with epistaxis in comparison to control population, suggesting the possibility of blood group O being the risk factor for epistaxis.

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