

Relation of Blood Group with Epistaxis

Relação de Grupo Sangüíneo com Epistaxe

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RESUMO

- Introdução:** A epistaxe é uma das urgências otorrinolaringológicas mais comuns. O agrupamento sanguíneo é realizado regularmente em pacientes com epistaxe.
- Objetivo:** Este estudo foi realizado para observar o grupo sanguíneo padrão e relativo em pacientes com epistaxe comparados a pacientes sem epistaxe.
- Método:** Um estudo prospectivo em 470 pacientes (20-70 anos de idade) foi conduzido no Departamento de ENT e de cirurgia de cabeça, Hospital Acadêmico de TU, de Katmandu, apresentado entre julho de 2004 e junho de 2008. Os pacientes apresentando epistaxe foram comparados com pacientes sem histórico da doença. Os agrupamentos sanguíneos foram realizados para ambos os grupos de pacientes. Havia 470 pacientes, 235 em cada grupo. Análise estatística foi feita por análise manual simples e teste de qui-quadrado.
- Resultados:** Entre os pacientes com epistaxe, a distribuição do grupo sanguíneo O estava presente em 45,5%. Ao passo que em pacientes sem epistaxe, o percentual era de 36,5%. A maioria dos pacientes em ambos os grupos era O positivo. O grupo sanguíneo O está significativamente associado à epistaxe comparado com pacientes sem a doença.
- Conclusão:** O grupo sanguíneo O é reconhecido por estar associado com uma expressão mais baixa do fator Von Willebrand, que representa um papel importante na coagulação. O grupo sanguíneo O é o grupo sanguíneo mais comum em ambos os grupos de pacientes. É significativamente mais alto em pacientes com epistaxe comparados com outros pacientes. Isto sugere que o grupo sanguíneo O pode ser um fator de risco no desenvolvimento da epistaxe.
- Palavras-chave:** epistaxe, grupo sanguíneo, fator von Willebrand.

SUMMARY

- Introduction:** Epistaxis is one of the most common otorhinolaryngologic emergencies. Blood grouping is routinely done in patients with epistaxis.
- Objective:** This study was done to observe the pattern and relation blood group in patients with epistaxis compared with non epistaxis patients.
- Method:** A prospective study in 470 patients (age:20-70 years) was conducted in Department of ENT and Head and surgery, TU Teaching Hospital, Kathmandu presented between July 2004 - June 2008. Patients presenting with epistaxis were compared with patients without history of epistaxis. Blood groupings were done for both groups of patients. There were 470 patients, 235 each in group of patients. Statistical analysis was done by simple manual analysis and Chi square test.
- Results:** Among the patients with epistaxis, blood group O distribution was present in 45.5%. While in patients without epistaxis, it was 36.5%. Most of the patients in both groups were O positive. Blood group O is significantly associated with epistaxis compared with non epistaxis patients.
- Conclusion:** Blood group O is known to be associated with a lower expression of von Willebrand factor which plays an important role in clotting. Blood group O is more common blood group in both groups of patients. It is significantly higher in patients with epistaxis compare with non epistaxis patients. It suggests that blood group O may be a risk factor in the development of epistaxis.
- Keyword:** epistaxis, blood group, von Willebrand factor.

INTRODUCTION

Epistaxis is one of the commonest otorhinolaryngologic emergencies (1-4). It is also a common problem in Nepal. Most cases of epistaxis do not have an easily identifiable cause (5). Both local and systemic processes can play a role in it (6). The bleeding may occur from one or many bleeding points particularly Little's area or posteriorly (7,8). Treatment of epistaxis encompasses different modalities (9). This study was done to observe the pattern and relation of blood group in patients with epistaxis compared with non epistaxis patients.

METHOD

A prospective study (age:20-70 years) was conducted in department of ENT and Head and surgery, Tribhuvan University Teaching Hospital, Kathmandu presented between July 2004 - June 2008. Patients presenting with epistaxis were compared with patients without history of epistaxis. Blood groupings were done for both groups of patients. Patients with history of trauma, bleeding disorders, local pathology were excluded from the study. There were 470 patients, 235 each in both groups of patients. Informed consent was taken for the study and local ethical committee had no objection to do this study. Statistical analysis was done by simple manual analysis and chi square test.

Standard slide method was adopted: a drop of each of the monoclonal anti-sera (Anti A, Anti B and Anti D) (manufactured by Tulip Diagnostics (P) Limited, Old Goa, India) were taken on glass slides. The subject's blood cells whose blood group is to be determined was mixed with each serum separately with the help of separate glass rods. Blood groups were determined on the basis of agglutination reaction within 5 minutes of mixing as follows:

Reacting with Anti A	Reaction with Anti B	Group
+	+	AB
+	-	A
-	+	B
-	-	O

Table I. Blood Group in patients with and without Epistaxis.

Blood Group/Patients	A Positive Number (%)	B Positive Number (%)	O Positive Number (%)	AB Positive Number (%)
Patients with Epistaxis	22.5%	17.8%	45.5%*	8.9%
Patients without Epistaxis	28.08%	28.08%	36.5%	7.2%

*P value less than 0.05%

RESULTS

Among the patients with epistaxis O group distribution was present in 45.5%. While in patients without epistaxis, it was 36.5%. (Table 1). Most of the patients in both groups were blood group O positive. Blood group O is significantly associated with epistaxis. (p value less than 0.05%), (Table 1).

DISCUSSION

Epistaxis is the most common ENT emergency worldwide (10). It is found to be the most common ENT emergency in TUTH, Kathmandu (11). Epistaxis is not a diagnosis. It may be a symptom or a sign (7). Blood grouping is routinely done in patients with epistaxis. Sometimes, blood transfusion in patients with epistaxis can save the life of a person.

Blood grouping is based on antigenic property of red blood cells (RBC). According to the presence of these antigens and antibodies blood is divided into four major groups called A, B, AB and O (12-14). PRAMANIK and ADHIKARI study revealed O group as the most predominant (35.5%) and AB group as the least prevailing group among Nepalese population (15).

Blood group O is associated with a lower expression of von Willebrand factor (also known as factor IX) compared with non O blood groups (16). The role of von Willebrand factor in clotting cascade includes, complex formation with factor VIII and calcium in the final stage of the intrinsic pathway which activate factor X of the common pathway (13). (Figure 1). A longer bleeding time was demonstrated in patients with blood group O, compared with non O groups (17).

Halonnen et al study revealed that elective abdominal and urological surgery demonstrated no significance of blood group O on bleeding tendency intraoperatively, although the study rely on subjective measures of bleeding tendency by the operating surgeon at the end of the operation (18). The higher risk of deep vein thrombosis in individuals belonging to non O blood groups having a

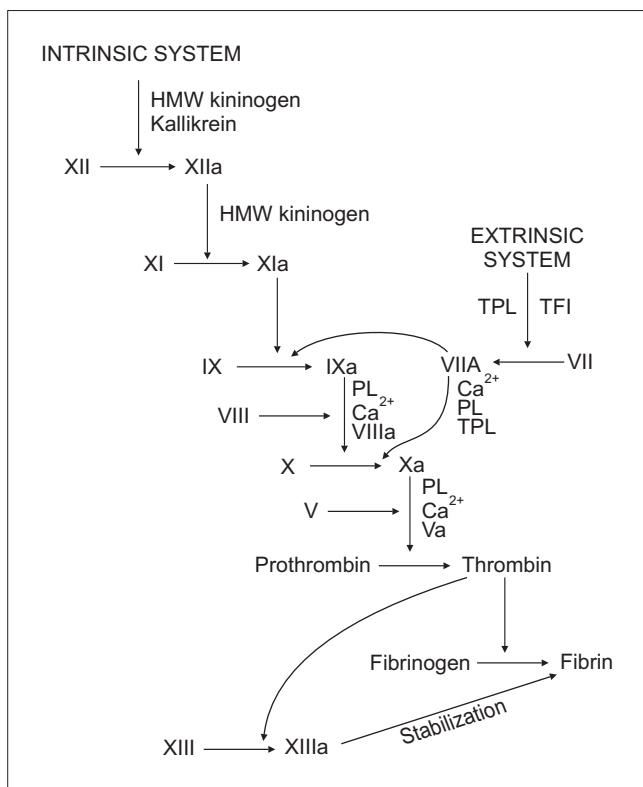


Figura 1. The clotting mechanism. a- active form of clotting factor; TOL- tissue thromboplastin; TFI- tissue factor pathway inhibitor; PL- phospholipids from aggregated platelets.

higher von WILLEBRAND factor concentration compared with individuals of blood group O was also documented (19). All these suggest that blood group O confers a relative bleeding tendency (20).

Our study also revealed that Blood group O is significantly higher in patients with epistaxis compared with non epistaxis patients (controls), which might be due to the lower expression of von Willebrand factor causing bleeding tendency as we seen in our patients.

According to MILLER et al study, Blood group O is associated with a lower expression of von Willebrand compared with non O blood groups. Individuals with blood group O are more likely to be diagnosed as having a mild form of von Willebrand disease (16). This recent study also showed that blood group O is predominantly significant in patients with epistaxis compared with non O blood group.

CONCLUSION

Blood group O is more common blood group in both groups of patients. However, there is no difference in other blood group patterns (A, B, AB +ve) in both groups of patients with or without epistaxis. Blood group O is known

to be associated with a lower expression of von Willebrand factor which plays an important role in clotting. It is significantly higher in patients with epistaxis compare with non epistaxis pateitns. It suggests that blood group O may be a risk factor in the development of epistaxis.

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