

SHORT REPORT

**ABO blood groups distribution among Russell's viper (*Vipera russelii*)  
bite patients with systemic envenomation**

\*Win Aung & \*\*San Aye

\*Blood Programming Division  
\*\*Chemical Toxicology Research Division  
Department of Medical Research (Lower Myanmar)

The ABO-blood group distribution is not uncommonly associated with many diseases [1, 2, 3]. It is also well documented that Russell's viper bite envenomation, one of the major health problems in the countries of Southeast Asia region including Myanmar, induces haematological and coagulation changes in victims [4, 5]. However, ABO blood group distribution among the victims of Russell's viper bite envenomation has not been studied yet. Therefore, it is necessary to determine whether ABO blood group distribution is related to systemic envenomation and various complications in the victims following Russell's viper bite. This was a hospital-based, non intervention, descriptive study, carried out on Russell's viper bite patients admitted to the Tharyarwady Township Hospital, Bago Division. Cases of Russell's viper bite were confirmed by identifying the dead snake brought with the patient to the hospital and / or detection of the development of signs and symptoms of Russell's viper bite envenomation. Finger stick blood specimens were taken from these victims at the time of admission. ABO-blood group typing was performed by conventional technique using commercial reagents; known anti-A and anti-B. These patients were thoroughly examined and kept under close observation for a minimum of 5 days in the hospital. Anti-snake venom therapy was indicated according to the guidelines recommended by National Seminar on Snake Bite held

in Myanmar in 1989 and complications following Russell's viper envenomation were also recorded. It was found that the percentage distribution of A,B,AB and O blood groups in 112 Russell's viper bite victims were found to be 25.9 %, 31.3 %, 8.9 % and 33.9 % of total cases respectively. The various complications following Russell's viper bite envenomation such as disseminated intravascular coagulation, clinical proteinuria, oliguric acute renal failure, hypotension, systemic bleeding and death among these victims were observed in 42.9 %, 41.1%, 20.5 %, 12.5 %, 10.7 % and 8% of total cases respectively. Table 1 summarizes the detailed distribution of Russell's viper bite patients with different ABO blood groups among various complications following systemic envenomation in this study.

It is apparent from our findings that there was no significant relationship between frequency distribution of ABO blood groups and various types of complications following envenomation in Russell's viper bite victims. Numbers of Russell's viper bite victims with different ABO blood groups were found to be equally distributed in all types of complications. In other words, there was an equal distribution of ABO blood groups in all types of complications following systemic envenomation encountered in Russell's viper bite victims. There was no possibility that ABO blood

Table 1. Distribution of ABO blood groups in Russell's viper bite patients with systemic envenomation and various complications

Blood group	Total cases studied	No of patients with types of complications ( Percentage )					
		DIC	Protein-uria	Oliguric ARF	Hypo-tension	Systemic bleeding	Death
A	29	13 (44.8)	12 (41.4)	6 (20.7)	4 (13.8)	3 (10.3)	2 (6.8)
B	35	15 (42.9)	15 (42.9)	8 (22.9)	4 (11.4)	4 (11.4)	3 (8.6)
AB	10	4 (40)	4 (40)	2 (20)	1 (10)	1 (10)	1 (10)
O	38	16 (42.1)	15 (39.5)	7 (18.4)	5 (13.2)	4 (10.5)	3 (7.9)
Total	112	48 (42.9)	46 (41.1)	23 (20.5)	14 (12.5)	12 (10.7)	9 (8)
$\chi^2$		0.09	0.09	0.22	0.15	0.03	0.27
p value		0.99	0.99	0.97	0.98	0.99	0.44
Significance		NS	NS	NS	NS	NS	NS

Percentage of cases studied are shown in parentheses  
Significance p values were calculated by using the Chi-square test

NS means not significant at the 5% probability level

group distribution is related with Russell's viper bite envenomation and development of various complications.

## REFERENCES

1. Aird J & Bentarl HH. A relationship between cancer of stomach and the ABO blood group. *British Medical Journal* 1953; 1:799-861.
2. Chaudhuri A. Cholera and blood groups. *Lancet* 1977; 2: 404-405.
3. Szmunes W, Prince AM & Cherubin CHE. Serum hepatitis antigen carrier rate relation to ABO blood groups. *British Medical Journal* 1971; 2: 198-199.
4. Aung Khin, Khin Ma Ma & Thant Zin. Effects of Russell's viper venom on blood coagulation, platelets and the fibrinolytic enzyme system. *Japanese Journal of Medical Science and Biology* 1977; 30: 101-108.
5. Than Than, Hutton RA, Myint Lwin, Khin Ei Han, Soe Soe, Tin Nu Swe, Phillips RE & Warrell DA. Haemostatic disturbances in patients bitten by Russell's viper (*Vipera russelli siamensis*) in Burma. *British Journal of Haematology* 1988; 69: 513-520.