

Snakebite: Prospective Study of Fifty Cases in Bahawalpur Region.

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A prospective study of fifty cases of snakebite was undertaken. Vasculotoxic was the commonest variety (60%). Majority of the cases seen was in summer season. Tourniquet and pressure bandage application was the commonest pre-medical treatment remedies. Adult males while working especially watering the land were the commonest victims. Lower limb was the common site bitten by snakes. All the patients were found frightened after bite. Fang marks (84%), pain, swelling and bleeding from the bitten site (64%) were the other common clinical features. Multiple site bleeding (20%), tetanus, acute renal failure and shock were the complications encountered in this series. Mortality rate seen in this study was 10%. The common laboratory abnormalities noted in this study were disturbed bleeding profile like increased PT, A.P.T.T., Bleeding time, clotting time and thrombocytopenia.

Key Words: Snake bite, poisonous reptile, vasculotoxic snake, neurotoxic snakes.

Snakes are almost cosmopolitan in distribution and snakebite is an acute health problem with ominous outcome. Its incidence is more in the agricultural areas of the tropics and sub-tropics¹. In our area being an agricultural zone, snakebite is a common problem. In 1968 Minton Jr² reported 10-12,000 deaths in Pakistan from snakes which is estimated to have increased to 20,000 annually by 1990.

In Pakistan, about 57 species and sub-species of terrestrial snakes have been reported, out of which about 8 are poisonous³. But cobra (*Naja naja*, nag, kala samp), Indian krait, Russell's viper (do-moin in Punjabi) and saw-scaled viper (*Echis phissi*, lundi, jalabi) are the commonest poisonous snakes⁴. In rural areas especially in Cholistan snakebite is very common but the medical facilities are very poor. People use various traditional remedies, which result in delay in proper management of the snakebite cases causing high morbidity and high mortality. The objectives of this study were to determine the variety of snake toxin, premedical remedies used by the people, season, site and type of work commonly encountered in snakebite. The clinical features and complications were also recorded.

Patients and methods

A prospective study of 50 cases of snakebite was carried out in the medical unit-1 of Bahawal Victoria hospital Bahawalpur which is affiliated to Quaid-e-Azam medical college Bahawalpur in 1995-96. The cases included were above the age of 15 when either snake was identified while biting or without identification two fangs marks were detected.

A detailed clinical history was taken with special emphasis upon; place & time of bite, type of work while bitten, type of snake if recognized, time elapsed between bite and arrival in hospital, pre-medical remedied used.

Full clinical examination was done locally as well as systematically. All complications were noted. The following investigations were carried out in all patients at admission and some of these were repeated if they were required; urine complete examination, blood complete examination, bleeding time (B.T.), clotting time (CT), prothrombin time (PT), activated partial thromboplastin time (APTT), fibrinogen degradation products (FDP) level, serum urea, serum creatinine, serum electrolyte. ECG and x-rays of the chest were done in some patients. CAT scan of the brain was taken in one patient with multiple cranial nerve palsies.

The diagnostic criteria used for Vasculotoxic snake was fang marks, pain, local swelling, bleeding at the bitten site and for neurotoxic; muscle weakness, muscle fasciculation, ptosis, dysphagia and respiratory distress.

Results:

Majorities of our cases were males (76%) and most of them were in their adulthood (Table 1).

Table 1: age distribution n= 50

Age in years	n=	%age
15-20	10	20
21-30	11	22
31-40	14	28
41-50	9	18
51 +	6	12

Seasonal variations are shown in table 2. Vasculotoxic (Russell's viper/ *Echis carinatus*) snakebite was found to be predominant (60%)(table 3). The most victims were bitten in afternoon(table 4). Among the pre-medical remedies, tourniquet application and pressure bandage to the bitten limb was found to be common (table 6). The watering of the field was that commonest place of bite (table 7)

Snake Bite

Table 2: seasonal variation (n=50)

Months	1995	1996	Total	%age
January	0	0	0	0
February	0	0	0	0
March	1	0	1	2
April	1	1	2	4
May	3	3	6	12
June	4	5	9	18
July	6	5	11	22
August	7	6	13	26
September	4	3	7	14
October	0	1	1	2
November	0	0	0	0
December	0	0	0	0
Total	26	24	50	100

Table 3: varieties of snakebite. n=50

Snakes	n=	%age
Neurotoxic	12	24
Vasculotoxic	30	60
Non-toxic	8	16

Table 4: time of bite. n=50

Time	n=	%age
Morning(5am-12noon)	7	14
Afternoon(12-4pm)	18	36
Evening(4pm-8pm)	13	26
Night(8pm-5am)	12	24

Common site of bite was lower limb (table 5)

Table 5: site of bite. n=50

Site	n=	%age
Lower limb	43	86
Upper limb	7	14
Face	0	0

Table 6. Pre-medical measures undertaken(n=50)

Measures	n=	%Age
Tourniquet application	20	40
Pressure bandage	12	24
Incision at the site	8	16
Application of herbs	5	10
Immobilization	5	10

Table 7 place of bite (n=50)

Place of bite	n=	%age
Farm	12	24
Factory	10	20
Home	13	26
Watering the land	15	30

The majority of victims were working when they were bitten (table 8)

Table 8 state of victim at he time of biting (n=50)

State of victim	n=	%age
Walking	15	30
Working	25	50
Sitting	7	14
Sleeping	3	6

Most of the cases consulted many hours after bite (table 9)

Table 9: Time elapsed between bite and arrival in hospital. (n=50)

Time	n=	%Age
0-6 Hours	15	30
7-12 Hours	18	36
13-24 Hours	10	20
25+ Hours	7	14

The clinical features and complications are shown in table 10

Table 10 Clinical features and complications of snake bite n=50

Clinical features	n=	%Age
Pain at the site of bite	30	60
Fang marks	42	84
Swelling & edema at site of bite	32	64
Discoloration of skin	30	60
Bleeding from the site	42	84
Ecchymosis	8	16
Drowsiness	8	16
Frightened	50	100
Muscle weakness	8	16
Slurring of speech, dysphagia	8	16
Ptosis	10	20
Unconsciousness	3	6
Multiple site bleeding	10	20
Shock	3	6
Intracerebral hemorrhage	1	2
Acute renal failure	3	6
Tetanus	5	10
Death	5	10

The laboratory abnormalities are reflected in table 11.

Table 11 Laboratory abnormalities (n=50)

Lab. Abnormalities	n=	%age
Thrombocytopenia	35	70
Leucocytosis	20	40
Decreased HB	15	30
Increased bleeding time	30	60
Increased clotting time	20	40
Increased PT	22	44
Increased APTT	23	46
Increased FDP level	20	4
Increased creatinine	3	6
RBCs in urine	4	8

Discussion

Snakebite is the second most leading cause of poisoning in rural areas after pesticide poisoning. It may become fatal if not managed well in time. The delay in consultation is a common problem. The patients usually present late, as it is also evident in our series. This may be due to lack of health education, belief in spiritual healers; "jogis" etc. and unavailability of speedy transportation in rural areas.

Generally non-poisonous snakes are 10 times more common than the poisonous variety⁵. Because of this very fact, most of the snake bites victims become all right with simple local measures or with the treatment of "Jogis". So the people still believe in them. Because our study was conducted in a tertiary care hospital, less cases of non-poisonous snake bite (16%) reported to us. Among the poisonous snakes neurotoxic were less commonly encountered (24%) in our study. They consulted earlier and early treatment led to uneventful recovery in them. This pattern is in contrast to that seen by Munir AH³ and Khan MS⁶ where neurotoxic cases were equal to vasculotoxic. The low incidence may be real or may be less consultation of neurotoxic cases to this city hospital.

The pre-medical treatment remedies were comparable to that of Shabbier Hussain et al⁷ except that pressure bandage (50% Vs 24%) was more common than immobilization of the limb (24% Vs 48%). Majorities of our cases were young males, becoming victim while working in their farms and watering the land. This pattern is comparable to that of Shabbier Hussain et al except that watering the land was common place of bite in our study. Because majority of people in this area are cultivators. The lower limb especially the feet was the common site of bite, same as observed in another study⁷, probably people work in standing and are most of the time barefooted.

The incidence was more in summer season. This is usually because snakes hibernate in winter & are inactive while in warm weather they are active and have greater vigor. Secondly flood in the rainy season forces them to come out of their burrows and come near the human population. And thirdly people in hot weather work barefooted.

The clinical features were same as mentioned in the literature. The commonest complication found was bleeding from multiple sites and it is usually due to consumption coagulopathy⁷ leading to DIC and in few patients primary fibrinolysis⁸. Direct vessel damage is also one factor leading to bleeding. The other complications encountered were acute renal renal failure and tetanus. The clostridium tetani are present in mouth of snakes so the complication of snakebite is not unexpected. The

prophylactic anti-tetanus vaccination is must in the management of snakebite.

While anti-venom therapy remains the mainstay of the treatment along with supportive measures like blood transfusion, care of wound and anti-tetanus vaccination etc., the people education about first aid measures, adopting simple preventive measures like wearing long boots in the fields and early consultation to a medical center cannot be overemphasized.

References:

1. Jena I, Sarangi A (ed.): Snakes. In Snakes of medical importance and snakebite treatment. 1st edition. Ashish Publishing House 8/81, Punjabi Bagh, New Delhi-110 026: 1993: PP: 1-69.
2. Minton Jr.: A contribution to the herpetology of West Pakistan; Bulletin; American Museum Natural history New York:1966: 134(2): 27-184.
3. Muneer a H: Survey of the species of snakes found in Pakistan: A.F. Med.J. XIX (1): 1-19: 1969.
4. Khan MS: Venomous terrestrial snakes of Pakistan. In The snake. 1983:15: 101-105.
5. Russell F E; When a snake strikes. In Emergency Medicine: June :1990: PP. 22-43.
6. Khan MS: Venomous terrestrial snakes of Pakistan and snake bite problem. In Gopalakrishnakone and LN Chou, (ed). Snakes of medical importance (Asia- Pacific region) 3rd ed. 1st & National university of Singapore, 1990: PP. 419-445.
7. Shabbier Hussain et al; Pre-hospital measures of snakebite in Sindh ; Specialist, Pak. J. Med. ; Oct-Dec 1995: 2: 123-26.
8. Nagi A; Rehman A: Effects of Russell's viper venom on blood coagulation, platelets and fibrinolysis : JPMA. April: 1983.
9. Merchant MR et al; Clinico-pathological study of acute renal failure following viper bites; J-Assoc-Phys-India. July.1989:37(7): 430-31.