



Effects of Snakebite in India

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ABSTRACT

Objective: *To study the respondent's clinical profile of snake envenomation in a tertiary referral of Pondicherry in India.*

Material and Methods: *Retrospective case note treatment analysis of all cases (75 cases) of snakebite admitted to the medical emergency from January 2013 to July 2016.*

Results: *It is clear from the findings, it is concluded, that even in the absence history of snake bite, cases presenting with sudden onset of neurological symptoms, such as, weakness in limbs, respiratory paralysis and drooping of eyelids, a possibility of snake envenomation should be considered. Timely, administration of intravenous polyvalent ASV, along with Ventilatory support proves to be life saving in all such cases.*

INTRODUCTION

Snake bite is an established important cause of morbidity and mortality among the poor, rural tropical population. Snakebite is an injury caused by a bite from a snake, often resulting in puncture wounds inflicted by the animal's fangs and sometimes resulting in envenomation. Although the majority of snake species are non-venomous and typically kill their prey with constriction rather than venom, venomous snakes can be found on every continent except Antarctica. Snakes often bite their prey as a method of hunting, but also for defensive purposes against predators. Since the physical appearance of snakes may differ, there is often no practical way to identify a species and professional medical attention should be sought.

The outcome of snake bites depends on numerous factors, including the species of snake, the area of the body bitten, the amount of venom injected, and the health conditions of the victim. Feelings of terror and panic are common after snakebite and can produce a characteristic set of symptoms mediated by the autonomic nervous system, such as a racing heart and nausea. Bites from non-venomous snakes can also cause injury, often due to lacerations caused by the snake's teeth, or from a resulting infection. A bite may also trigger an anaphylactic reaction, which is potentially fatal. First aid recommendations for bites depend on the snakes inhabiting the region, as effective treatments for bites inflicted by some species can be ineffective for others.

India is reported to have the highest number of snake bites (81,000) and deaths (11,000) per year [1,2]. However, the geographical distribution and statistics are variable in the country due to gross underreporting, resulting in massive statistical disparity. Estimates of death due to snake bite range widely from 1,300-50,000. According to Government of India data, there were 61,507 snake bites with mortality of 1124 in 2006; 76,948 bites and 1359 deaths in 2007. A high mortality of 50,000 deaths each year has also been published [3]. In the state of Maharashtra an average of 1,224 deaths per year (2.43 deaths per 1,00,000 per year) were reported between 1974 and 1978. Random community based surveys in some localities in West Bengal, have shown much higher annual mortality rates of 16.4 deaths per 1,00,000 [4]. A report by the hospitals of Government of India, from all states, except six documents just 1,364 deaths due to snakebites in 2008, believed to be gross under reporting, as rural victims seek traditional treatment [5]. A nationally representative snake bite mortality survey in India (2001-2003) has highlighted 45,900 deaths annually, with the highest mortality rate in the state of Andhra Pradesh [6].

The American Society of Tropical Medicine and Hygiene said in India 46,000 people are dying every year from snakebites against the official figure of only 2,000.

More than 2.5 lakh cases of snake bites are reported every year. Those who survive the bite on the spot, subsequently die due to delay, unable to reach a hospital within the crucial golden hour or due to lack of treatment, resulting in overdose of anti-venom.

The statistics are shocking, considering India is neither home to the largest number snakes in the world nor is there a shortage of anti-venom in the country.

India had finalized a national policy that would ensure fast and effective use of anti-venom, besides making it available to healthcare centres in backward villages. The policy was to help train doctors who had inadequate knowledge on how to

deal with the neuro-toxic shock that the patient experiences from a snake bite besides providing guidelines for hospitals conducting research on the subject. In this context present study analyses effect of snake bite cases admitted in the medical emergency in Pondicherry region.

OBJECTIVE OF THE STUDY

To study the respondent's clinical profile of snake envenomation in a tertiary referral of Pondicherry state in India.

MATERIAL AND METHODS

Retrospective case note treatment analysis of all cases (75 cases) of snakebite admitted to the medical emergency from January 2013 to July 2016.

RESULTS AND DISCUSSIONS

Table – 1 Age wise distribution of snake bite cases (N = 75)

S.No	Age	Frequency	Percent
1.	20 Yrs & Below	10	13.3
2.	21 – 30 Yrs	14	18.7
3.	31 – 40 Yrs	13	17.3
4.	41 – 50 Yrs	22	29.3
5.	51 – 60 Yrs	11	14.7
6.	Above 60 Yrs	5	6.7

Table-1 explains age wise distribution of snake bite cases in Pondicherry region. Out of 75 snake bite cases, 13.3 percent cases are coming in the age group of 20 years and below. 18.7 percent cases are registered in the category of 21 to 30 years and 17.3 percent cases are found from 31 to 40 years. Further, 29.3 per cent cases fall under the category of age group between 41 to 50 years. 14.7 per cent cases recorded under the category of 51 to 60 years. Only, 6.7 per cent cases found in above 60 years age group category. It is clear that the above table that most of the snake bite cases found in the age group of 21 to 30 years and 41 to 50 years.

Table – 2 Gender wise distribution of snake bite cases (N = 75)

S.No	Gender	Frequency	Percent
1.	Male	55	73.3
2.	Female	20	26.7

Table-2 explains gender wise distribution of snake bite cases in Pondicherry region. Out of 75 snake bite cases, 73.3 percent cases are coming under male category and 26.7 percent cases are female. It is clear that the above table that most of the snake bite cases found in the male category in pondicherry region.

Table – 3 Complication of snake bite cases (N = 75)

S. No	Complications	Frequency	Percent
1.	Nil	68	90.7
2.	Hematotoxic	2	2.7
3.	VAP, Hyposic Ischemic Encephalopathy	1	1.3
4.	Signs of Neurotoxicity	2	2.7
5.	Bradycardia, Desaturation	1	1.3
6.	Early kidney injury	1	1.3

Table-3 explains complications of snake bite cases in Pondicherry region. Out of 75 snake bite cases, 90.7 percent cases are free from health complications. 2.7 percent cases are registered in the category of Hematotoxic problem and 1.3 percent cases have suffered VAP and Hyposic Ischemic Encephalopathy problem. Further, 2.7 per cent cases have got a sign of Neurotoxicity. 1.3 per cent cases recorded under early kidney injury problem. It is clear that the above tables that most of the snake bites cases are not having significant complications in the study region.

Table – 4 Type of Treatment for snake bite cases (N = 75)

S. No	Procedure / Surgery, ASV – Vials	Frequency	Percent
1.	Nil	20	26.7
2.	10 & Below	23	30.7
3.	11 – 20	22	29.3
4.	21 – 30	4	5.3
5.	31 – 40	3	4.0
6.	Above 40	3	4.0

Table-4 explains Types of treatment for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 26.7 percent cases didn't take treatment of

ASV-vials. 30.7 percent cases have taken 10 and below ASV-vials treatment and 29.3 percent cases have taken 11 to 20 ASV-vial treatments. 5.3 per cent cases recorded under the category of 21 to 30 ASV-vial treatments. 4.0 per cent cases have treated with 31 to 40 ASV-vials. Another 4.0 percent cases have treated with above 40 ASV-vials. It is clear that the above table that most of the snake bite cases have treated with 10 and below and 11 to 20 ASV-vials.

Table – 5 Area wise distribution of snake bite cases (N = 75)

S. No	Area	Frequency	Percent
1.	Rural	48	64.0
2.	Urban	27	36.0

Table-5 explains area wise distribution of snake bite cases in Pondicherry region. Out of 75 snake bite cases, 64.0 percent cases are from rural areas and 36.0 percent cases are from urban areas. It is clear that the above table that most of the snake bite cases found in rural areas in pondicherry region.

Table – 6 Types of snakes (N = 75)

Sl. No	Type of Snake	Frequency	Percent
1.	Unknown	56	74.7
2.	Viper	11	14.7
3.	Hematotoxic	6	8.0
4.	Neurotoxic	2	2.7

Table-6 explains area Types of snake in Pondicherry region. Out of 75 snake bite cases, 74.7 percent case bitten by unknown category of snakes and 14.7 percent cases have bitten by Viper snakes. Further, 8.0 cases are bitten by Hematotoxic snakes. 2.7 percent cases have suffered Neurotoxic snake bites. It is clear that the above table that most of the cases are suffered from Unknown snake bite.

Table – 7 Place of bite (N = 75)

S. No	Site	Frequency	Percent
1.	Leg	53	70.7
2.	Hand	22	29.3

Table-7 explains place of bite of the cases in Pondicherry region. Out of 75 snakes bite cases, 70.7 percent cases are suffered due to bite in their leg and 29.3 percent cases affected because of get

bite from their hands. It is clear that the above table that most of the snakes bite in their leg.

Table – 8 Symptoms of snakebite cases (N = 75)

S. No	Symptoms	Frequency	Percent
1.	Nil	32	42.7
2.	Headache/Pain	21	28.0
3.	Blurring of Vision	9	12.0
4.	Bleeding, from site	1	1.3
5.	Giddness, chest paint, drowsiness, breathing difficulty	10	13.3
6.	Breathlessness, Giddiness, Chest Discomfort	2	2.7

Table-8 explains symptoms of snake bite cases in Pondicherry region. Out of 75 snake bite cases, 42.7 percent cases didn't get any symptoms. 28.0 percent cases have got a symptom of headache and pain and 12.0 percent cases have got the problem of blurring of vision. Further, 1.3 per cent cases have got symptom of bleeding from the bite area and 13.3 per cent cases have suffering from giddiness, chest pain, drowsiness and breathing difficulty. 2.7 per cent cases are suffering from breathlessness, and chest discomfort.

Table – 9 Signs of snakebite cases (N = 75)

S. No	Signs	Frequency	Percent
1.	Nil	40	53.3
2.	Swelling	17	22.7
3.	Bleeding	5	6.7
4.	Cellulites	5	6.7
5.	Others	8	10.7

Table-9 explains signs of snake bite cases in Pondicherry region. Out of 75 snake bite cases, 53.3 percent cases didn't get any signs. 22.7 percent cases have got a sign of swelling and 6.7 percent cases have got the problem of bleeding. Further, 6.7 per cent cases have got sign of bleeding from the bite area and another 6.7 per cent cases have suffering from cellulites. 10.7 per cent cases are suffering from other complications.

Table – 10 EGFR of snake bite cases (N = 75)

S. No	EGFR	Frequency	Percent
1.	80 & Below	2	2.7
2.	81 – 120	1	1.3
3.	121 – 160	36	48.0
4.	Above 160	36	48.0

Table-10 explains EGFR of snake bite cases in Pondicherry region. Out of 75 snake bite cases, 2.7 percent cases have get EFGR of 80 and below. 1.3 percent cases have got EGFR of 81 to 120 and 48.0 percent cases have got EGFR of 121 to 160. Further, 48.0 per cent cases have got EFGR of above 160.

ANOVA Model

S. No	EGFR	N	Std. Deviation	Mean square	DF	F value	Sig.
1.	20 Yrs & below	10	.516	1.012	5	2.575	.034
2.	31 – 30 Yrs	14	.363				
3.	31 – 40 Yrs	13	.555				
4.	41 – 50 Yrs	22	.716	.393	69		
5.	51 – 60 Yrs	11	.505				
6.	Above 60 Yrs	5	1.225				

To get accurate results, ANOVA model has been employed. The results of ANOVA are calculated and F value is recorded as 2.575, which is not significant at 5% level. Hence, there is a significant variation found among EFGR and snake bite cases.

Table – 11 Respiratory rate of snake bite cases (N = 75)

S. No	Respiratory rate	Frequency	Percent
1.	15 & Below	10	13.3
2.	16-20	59	78.7
3.	21-25	5	6.7
4.	Above 25	1	1.3

Table-11 explains Respiratory rate of snake bite cases in Pondicherry region. Out of 75 snake bite cases, 13.3 percent cases have get respiratory rate of 15 and below. 78.7 percent cases have got respiratory rate from 16 to 20 and 6.7 percent cases have got respiratory rate of 21 to 25. Further, 1.3 per cent cases have got respiratory rate of above25.

ANOVA Model

S. No	Respiratory Rate	N	Std. Deviation	Mean square	DF	F value	Sig.
1.	20 Yrs & Below	10	.632	.349	5	1.406	.233
2.	21 – 30 Yrs	14	.579				
3.	31 – 40 Yrs	13	.494				
4.	41 – 50 Yrs	22	.294	.248	69		
5.	51 – 60 Yrs	11	.603				
6.	Above 60 Yrs	5	.447				

ANOVA model has been employed to find respiratory rate of snake bite cases in Pondicherry region. The results of ANOVA are calculated and F value is recorded as 1.406, which is not significant at 5% level. Hence, there is a significant variation found among respiratory rate and snake bite cases.

Table – 12 Systolic BP for snake bite cases

(N = 75)

S. No	Systolic BP	Frequency	Percent
1.	100 & Below	5	6.7
2.	101-110	21	28.0
3.	111-120	9	12.0
4.	121-130	21	28.0
5.	131-140	12	16.0
6.	Above 140	7	9.3

Table-12 explains Systolic PB for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 6.7 percent cases have get Systolic BP of 100 and below. 28.0 percent cases have got Systolic BP of 101 to 110 and 12.0 percent cases have got Systolic BP of 111 to 120 . 28.0 percent cases have recorded Systolic BP of 121 to 130.Further, 16.0 per cent cases have got Systolic BP of 131 to 140 and 9.3 percent cases have got Systolic BP of above 140 in the region.

ANOVA Model

S. No	Systolic BP	N	Std. Deviation	Mean square	DF	F value	Sig.
1.	20 Yrs & Below	10	1.650	2.578	5	1.237	.301
2.	21 – 30 Yrs	14	1.301				
3.	31 – 40 Yrs	13	1.391				
4.	41 – 50 Yrs	22	1.541	2.084	69		
5.	51 – 60 Yrs	11	1.489				
6.	Above 60 Yrs	5	.707				

Table – 13 Diastolic BP for snake bite cases

(N = 75)

S. No	Diastolic BP	Frequency	Percent
1.	60 & Below	8	10.7
2.	61 – 70	16	21.3
3.	71 – 80	29	38.7
4.	81 – 90	15	20.0
5.	91 – 100	5	6.7
6.	Above 100	2	2.7

Table-13 explains Diastolic PB for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 10.7 percent cases have get Diastolic BP of 60 and below. 21.3 percent cases have got Diastolic BP of 61 to 70 and 38.7 percent cases have got Diastolic BP of 71 to 80 . 20.0 percent cases have recorded Diastolic BP of 81 to 90.Further, 6.7 per cent cases have got Diastolic BP of 90 to 100 and 2.7 percent cases have got Diastolic BP of above 100 in the region.

ANOVA Model

S. No	Diastolic BP	N	Std. Deviation	Mean square	DF	F value	Sig.
1.	20 Yrs & Below	10	1.647	1.497	5	1.105	.366
2.	21 – 30 Yrs	14	.949				
3.	31 – 40 Yrs	13	1.050				
4.	41 – 50 Yrs	22	1.214	1.355	69		
5.	51 – 60 Yrs	11	1.000				
6.	Above 60 Yrs	5	.894				

ANOVA model has been employed to find Diastolic PB for snake bite cases in Pondicherry region. The results of ANOVA are calculated and

F value is recorded as 1.105, which is not significant at 5% level. Hence, there is a significant variation found among Diastolic BP and snake bite cases.

Table – 14 SpO2 for snake bite cases (N = 75)

S. No	SpO2	Frequency	Percent
1.	96 & Below	3	4.0
2.	97 – 98	34	45.3
3.	99 – 100	38	50.7

Table-14 explains SPO2 for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 4.0 percent cases have get SPO2 of 96 and below. 45.3 percent cases have got SPO2 of 97 to 98 and 50.7 percent cases have got SPO2 of 99 to 100.

ANOVA Model

S. No	SpO2	N	Std. Deviation	Mean square	D F	F value	Sig.
1.	20 Yrs & Below	10	.516	.261	5	.772	.573
2.	21 – 30 Yrs	14	.646				
3.	31 – 40 Yrs	13	.519				
4.	41 – 50 Yrs	22	.568	.339	69		
5.	51 – 60 Yrs	11	.522				
6.	Above 60 Yrs	5	.837				

ANOVA model has been employed to find SPO2 for snake bite cases in Pondicherry region. The results of ANOVA are calculated and F value is recorded as 0.772, which is not significant at 5% level. Hence, there is a significant variation found among SPO2 for and snake bite cases.

Table – 15 CBC for snake bite cases

(N = 75)

Sl. No	CBG	Frequency	Percent
1.	100 & Below	24	32.0
2.	101 – 125	23	30.7
3.	126 – 150	17	22.7
4.	151 – 175	4	5.3
5.	176 – 200	4	5.3
6.	Above 200	3	4.0

Table-15 explains CBG for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 32.0 percent cases have get CBG of 100 and

below. 30.7 percent cases have got CBG of 101 to 125 and 22.7 percent cases have got CBG of 126 to 150. 5.3 percent cases have recorded CBG of 151 to 175. Further, 5.3 percent cases have got CBG of 176 to 200 and 4.0 percent cases have got CBG of above 200 in the region.

ANOVA Model

S. No	CBG	N	Std. Deviation	Mean square	DF	F value	Sig.
1.	20 Yrs & Below	10	1.776	2.012	5	1.132	.352
2.	21 – 30 Yrs	14	1.139				
3.	31 – 40 Yrs	13	1.127				
4.	41 – 50 Yrs	22	1.555	1.777	69		
5.	51 – 60 Yrs	11	.924				
6.	Above 60 Yrs	5	.837				

ANOVA model has been employed to find CBG for snake bite cases in Pondicherry region. The results of ANOVA are calculated and F value is recorded as 1.132, which is not significant at 5% level. Hence, there is a significant variation found among CBG and snake bite cases.

Table – 16 Urine RBC for snake bite cases

(N = 75)

Sl. No	Urine RBC	Frequency	Percent
1.	0	64	85.3
2.	1	3	4.0
3.	2	5	6.7
4.	3	1	1.3
5.	4	2	2.7

Table-16 explains Urine RBC for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 85.3 percent cases have get Urine RBC of Nil. 4.0 percent cases have got Urine RBC of 1 and 6.7 percent cases have got Urine RBC of 2. 1.3 percent cases have recorded Urine RBC of 3. Further, 2.7 percent cases have got Urine RBC of 4 in the region.

ANOVA Model

S.No	Urine RBC	N	Std. Deviation	Mean square	DF	F value	Sig.
1.	20 Yrs & Below	10	.699	.718	5	.939	.462
2.	21 – 30 Yrs	14	.535				
3.	31 – 40 Yrs	13	.000				
4.	41 – 50 Yrs	22	1.002	.764	69		
5.	51 – 60 Yrs	11	1.293				
6.	Above 60 Yrs	5	1.304				

ANOVA model has been employed to find Urine RBC for snake bite cases in Pondicherry region. The results of ANOVA are calculated and F value is recorded as 0.939, which is not significant at 5% level. Hence, there is a significant variation found among Urine RBC and snake bite cases.

Table – 17 Urine WBC for snake bite cases (N = 75)

S. No	Urine WBC	Frequency	Percent
1.	0	40	53.3
2.	1 – 2	21	28.0
3.	3 – 4	8	10.7
4.	5 – 6	2	2.7
5.	Above 6	4	5.3

Table-17 explains Urine WBC for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 53.3 percent cases have get Urine WBC of Nil. 28.0 percent cases have got Urine WBC of 1-2 and 10.7 percent cases have got Urine WBC of 3-4. 2.7 percent cases have recorded Urine WBC of 5-6. Further, 5.3 per cent cases have got Urine WBC of 6 and above in the region.

ANOVA Model

S.No	Urine WBC	N	Std. Deviation	Mean square	DF	F value	Sig.
1.	20 Yrs & Below	10	1.287	1.010	5	.834	.530
2.	21 – 30 Yrs	14	.756				
3.	31 – 40 Yrs	13	1.155				
4.	41 – 50 Yrs	22	.894	1.211	69		
5.	51 – 60 Yrs	11	1.662				
6.	Above 60 Yrs	5	.447				

ANOVA model has been employed to find Urine WBC for snake bite cases in Pondicherry region. The results of ANOVA are calculated and F value is recorded as 0.834, which is not significant at 5% level. Hence, there is a significant variation found among Urine WBC and snake bite cases.

Table – 18 Epi. Cells count for snake bite cases (N = 75)

S. No	Epi. Cells	Frequency	Percent
1.	0	39	52.0
2.	1 – 2	23	30.7
3.	3 – 4	10	13.3
4.	4 – 6	3	4.0

Table-18 explains Epi.cells count for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 52.0 percent cases have get Epi.cells count of Nil. 30.7 percent cases have got Epi.cells count of 1-2 and 13.3 percent cases have got Epi.cells count of 3-4. Further, 4.0 per cent cases have got Epi.cells count of 4- 6 in the region.

Table – 19 HB level for snake bite cases (N = 75)

S. No	HB level	Frequency	Percent
1.	10 & Below	6	8.0
2.	10 – 12	24	32.0
3.	13 – 14	19	25.3
4.	15 – 16	18	24.0
5.	Above 16	9	10.7

Table-19 explains HB level for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 8.0 percent cases have get HB level of 10 and below. 32.0 percent cases have got HB level of 10-12 and 25.3 percent cases have got HB level of 13-14. 24.0 percent cases have recorded HB level of 15-16. Further, 10.7 per cent cases have got HB level of 16 and above in the region.

Table – 20 PCV for snake bite cases (N = 75)

S.No	PCV	Frequency	Percent
1.	15 & Below	2	2.7
2.	16 – 30	5	6.7
3.	31 – 45	52	69.3
4.	46 – 60	13	17.3

Table-20 explains PCV for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 2.7 percent cases have get PCV of 15 and below. 6.7 percent cases have got PCV of 16-30 and 69.3

percent cases have got PCV of 31-45. Further, 17.3 percent cases have recorded PCV of 46-60.

Table – 21 Platelet count for snake bite cases (N = 75)

S. No	Platelet	Frequency	Percent
1.	Below 1	3	4.0
2.	1 – 2	32	42.7
3.	3 – 4	39	52.0
4.	Above 5	1	1.3

Table-21 explains Platelet count for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 4.0 percent cases have get Platelet count of below 1. 42.7 percent cases have got Platelet count of 1-2 and 52.0 percent cases have got Platelet count of 3-4. Further, 1.3 percent cases have recorded Platelet count of above 5.

Table – 22 TC for snake bite case (N = 75)

S. No	TC	Frequency	Percent
1.	Below 50001	2	2.7
2.	5001 – 10000	36	48.0
3.	10000 – 15000	22	29.3
4.	15001 – 20000	8	10.7
5.	20001 – 25000	4	5.3
6.	Above 25000	3	4.0

Table-22 explains TC for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 2.7 percent cases have get TC of below 5000. 48.0 percent cases have got TC of 50001-10000 and 29.3 percent cases have got TC of 10001-15000. 10.7 percent cases have recorded TC of 15001-20000. Further, 5.3 per cent cases have got TC of 20001- 25000 and 4.0 percent cases have got TC of above 25001 in the region.

Table – 23 Neutrophil for snake bite cases (N = 75)

S. No	Neutrophil	Frequency	Percent
1.	50 & Below	3	4.0
2.	51 – 65	11	14.7
3.	66 – 75	13	17.3
4.	76 – 85	33	44.0
5.	86 – 95	14	18.7
6.	Above 95	1	1.3

Table-23 explains Neutrophil for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 4.0 percent cases have get Neutrophil of 50 and below. 14.7 percent cases have got Neutrophil of 51-65 and 17.3 percent cases have got Neutrophil

of 66-75. 44.0 percent cases have recorded Neutrophil of 76-85. Further, 18.7 per cent cases have got Neutrophil of 86-95 and 1.3 percent cases have got Neutrophil of above 95 in the region

Table – 24 Lymphocyte for snake bite cases (N = 75)

S. No	Lymphocyte	Frequency	Percent
1.	10 & Above	10	13.3
2.	11 – 20	22	29.3
3.	21 – 30	12	16.3
4.	31 – 40	23	30.7
5.	41 – 50	7	9.3
6.	Above 50	1	1.3

Table-24 explains Lymphocyte for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 13.3 percent cases have get Lymphocyte of 10 and below. 29.3 percent cases have got Lymphocyte of 11-20 and 16.3 percent cases have got Lymphocyte of 21-30. 30.7 percent cases have recorded Lymphocyte of 31-40. Further, 9.3 per cent cases have got Lymphocyte of 41-50 and 1.3 percent cases have got Lymphocyte of above 50 in the region.

Table – 25 Eosinophil for snake bite cases (N = 75)

S. No	Eosinophil	Frequency	Percent
1.	5 & Below	49	65.3
2.	6 – 10	22	29.3
3.	11 – 15	1	1.3
4.	Above 15	3	4.0

Table-25 explains Eosinophil for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 65.3 percent cases have get Eosinophil of 5 and below. 29.3 percent cases have got Eosinophil of 6-10 and 1.3 percent cases have got Eosinophil of 11-15. Further, 4.0 per cent cases have got Eosinophil of above 15 in the region

Table – 26 Monocyte for snake bite cases (N = 75)

S. No	Monocyte	Frequency	Percent
1.	0 – 2	31	41.3
2.	3 – 5	23	30.7
3.	6 – 8	17	22.7
4.	9 & Above	4	5.3

Table-26 explains Monocyte for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 41.3 percent cases have get Monocyte of 0-2. 30.7 percent cases have got Monocyte of 3-5 and 22.7 percent cases have got Monocyte of 6-8. Further, 5.3 per cent cases have got Monocyte of 9 and above in the region.

Table – 27 PT for snake bite cases (N = 75)

S No	PT	Frequency	Percent
1.	Below – 10.5/11.3	10	13.3
2.	10.6 – 12.0/11.5	17	22.7
3.	12.1 – 15.0/12.5	27	36.0
4.	15.1 – 20.0/13.5	10	13.3
5.	Above – 20.0/13.5	11	14.7

Table-27 explains PT for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 13.3 percent cases have get PT of below to 10.5/11.3. 22.7 percent cases have got PT of 10.6 to 12.0/11.5 and 36.0 percent cases have got PT of 12.1 to 15.0/12.5. 13.3 percent cases have recorded PT of 15.1 to 20.0/13.5. Further, 14.7 per cent cases have got PT of above 20.0/13.5 in the region.

Table – 28 aPPT for snake bite cases (N = 75)

S. No	Appt	Frequency	Percent
1.	Below – 24.5/20.5	15	20.0
2.	24.6 – 26.0/26.5	9	12.0
3.	26.1 – 30.0/27.5	26	34.7
4.	30.1-35.0/28.5	13	17.3
5.	35.1-40.0/29	2	2.7
6.	Above 40.1/28	10	13.3

Table-28 explains aPPT for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 20.0 percent cases have get aPPT of below to 24.5/20.5. 12.0 percent cases have got aPPT of 24.6 to 26.0/26.5 and 34.7 percent cases have got aPPT of 26.1 to 30.0/27.5. 17.3 percent cases have recorded aPPT of 30.1 to 35.0/28.5. Further, 2.7 per cent cases have got aPPT of 35.1- 40.0/29.0 and 13.3 percent cases have got aPPT of above 40.1/28 in the region.

Table-29 INR for snake bite cases

(N = 75)

S. No	INR	Frequency	Percent
1.	0 – 1.0	41	54.7
2.	1.1 – 1.5	21	28.0
3.	1.5 – 5.5	10	13.3
4.	Above – 5.5	3	4.0

Table-29 explains INR for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 54.7 percent cases have get INR of 0 to 1.0. 28.0 percent cases have got INR of 1.1 to 1.5 and 13.3 percent cases have got INR of 1.5-5.5. Further, 4.0 per cent cases have got INR of above 5.5 in the region.

Table-30 Creatinine for snake bite cases

(N = 75)

S. No	Creatinine	Frequency	Percent
1.	Below – 0.5	20	26.7
2.	0.6 – 0.9	42	56.0
3.	1.0 – 2.0	4	5.3
4.	Above – 2.0	9	12.0

Table-30 explains Creatinine for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 26.7 percent cases have get Creatinine of below 0.5. 56.0 percent cases have got Creatinine of 0.6 to 0.9 and 5.3 percent cases have got Creatinine of 1.0-2.0. Further, 12.0 per cent cases have got Creatinine of above 2.0 in the region.

Table-31 Billrubin total for snake bite cases

(N = 75)

S. No	Billrubin Total	Frequency	Percent
1.	Below – 0.4	15	20.0
2.	0.5 – 0.9	50	66.7
3.	1.0 – 1.5	3	4.0
4.	1.6 – 2.0	2	2.7
5.	Above – 2.0	5	6.7

Table-31 explains Billrubin total for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 20.0 percent cases have get Billrubin total of below 0.4. 66.7 percent cases have got Billrubin total of 0.5 to 0.9 and 4.0 percent cases have got Billrubin total of 1.0-1.5. Further, 2.7 per cent cases have got Billrubin total of 1.6 to 2.0 in the region.6.7 per cent cases are having Billrubin total of above 2.

Table-32 Direct Billrubin for snake bite cases (N = 75)

S. No	Direct Billirubin	Frequency	Percent
1.	Below – 0.	59	78.7
2.	0.5 – 0.9	13	17.3
3.	1.0 – 1.5	2	2.7
4.	1.6 – 2.0	1	1.3

Table-32 explains direct Billrubin for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 78.7 percent cases have got direct Billrubin of below 0. 17.3 percent cases have got direct Billrubin of 0.5 to 0.9 and 2.7 percent cases have got direct Billrubin of 1.0-1.5. Further, 1.3 per cent cases have got direct Billrubin of 1.6 to 2.0 in the region.

Table-33 SGOT for snake bite cases (N = 75)

Sl. No	SGOT	Frequency	Percent
1.	Below – 20	28	37.3
2.	21 – 25	29	38.7
3.	26 – 30	11	14.7
4.	21 – 35	3	4.0
5.	36 – 40	1	1.3
6.	Above – 40	3	4.0

Table-33 explains SGOT for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 37.3 percent cases have get SGOT of 20 and below. 38.7 percent cases have got SGOT of 21-25 and 14.7 percent cases have got SGOT of 21-35. 4.0 percent cases have recorded SGOT of 21-35. Further, 1.3 per cent cases have got SGOT of 36-40 and 4.0 percent cases have got SGOT of above 40 in the region.

Table-34 SGPT for snake bite cases (N = 75)

S. No	SGPT	Frequency	Percent
1.	Below – 10	3	4.0
2.	11 – 15	8	10.7
3.	16 – 20	39	52.0
4.	21 – 25	10	13.3
5.	26 – 30	11	14.7
6.	Above – 35	4	5.3

Table-34 explains SGPT for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 4.0 percent cases have get SGPT of 10 and below. 10.7 percent cases have got SGPT of 11-15 and 52.0 percent cases have got SGPT of 21-25. 13.3 percent cases have recorded SGPT of 21-25. Further, 14.7 per cent cases have got SGPT of 26-

30 and 5.3 percent cases have got SGPT of above 35 in the region.

Table-35 WBCT for snake bite cases (N = 75)

S. No	WBCT	Frequency	Percent
1.	Clotted	58	77.3
2.	Not clotted	17	22.7

Table-35 explains WBCT of the cases in Pondicherry region. Out of 75 snakes bite cases, 77.3 percent cases WBCT are come under clotted list and 22.7 percent cases come under not clotted list. It is clear that the above table that most of the snakes bite cases WBCT are clotted.

Table-36 BT for snake bite cases (N = 75)

S. No	BT	Frequency	Percent
1.	Below – 1.5	4	5.3
2.	1.6 – 2.5	42	56.0
3.	2.6 – 3.5	21	28.0
4.	3.6 – 4.5	5	6.7
5.	Above – 4.5	3	4.0

Table-36 explains BT for snake bite cases in Pondicherry region. Out of 75 snake bite cases, 5.3 percent cases have got BT of below 1.5. 56.0 percent cases have got BT of 1.6 to 2.5 and 28.0 percent cases have got BT of 2.6 -3.5. Further, 6.7 per cent cases have got BT of 3.6 to 4.5 in the region. 4.0 per cent cases have got BT of above 4.5.

MAJOR FINDINGS:

- Most of the snake bites cases found in the age group of 21 to 30 years and 41 to 50 years.
- Among the respondents, 73.3 per cent of the snake bite cases found in the male category in pondicherry region.
- 90.7 per cent of the snake bites cases are not having significant complications in the study region. 64.0 per cent of the snake bite cases found in rural areas in pondicherry region.
- 74.7 per cent of the cases are suffered from Unknown snake bite. 70.7 percent cases are suffered due to bite in their leg.
- 53.3 percent cases didn't get any signs. 78.7 percent cases have got respiratory rate

from 16 to 20. 32.0 percent cases have get CBG of 100 and below. 85.3 percent cases have get Urine RBC of Nil.

- 32.0 percent cases have got HB level of 10-12. 69.3 percent cases have got PCV of 31-45.
- 44.0 percent cases have recorded Neutrophil of 76-85. 41.3 percent cases have get Monocyte of 0-2.
- 54.7 percent cases have get INR of 0 to 1.0. 56.0 percent cases have got Creatinine of 0.6 to 0.9.
- 77.3 percent cases WBCT are come under clotted list. . 56.0 percent cases have got BT of 1.6 to 2.5.
- It is clear from the above findings ,it is concluded, that even in the absence history of snake bite, cases presenting with sudden onset of neurological symptoms, such as, weakness in limbs, respiratory paralysis and drooping of eyelids, a possibility of snake envenomation should be considered. Timely, administration of intravenous polyvalent ASV, along with Ventilatory support proves to be life saving in all such cases.

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