ORIGINAL RESEARCH PAPER

Volume-7 | Issue-10 | October-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

TO STUDY THE CLINICAL PROFILE OF RENAL DYSFUNCTION IN SNAKE BITE PATIENTS IN A TERTIARY CARE CENTRE

Medicine

Patange Aparna — Associate Professor, Department of Medicine, Krishna Institute of Medical Sciences, Karad, Maharashtra

Immadisetty Sandeep Kumar* — PG Resident, Department of Medicine, Krishna Institute of Medical Sciences, Karad, Maharashtra, * Corresponding Author

ABSTRACT

INTRODUCTION: Snake bite is one of the common emergencies encountered in our emergency practice and is more common in tropical india where farming is predominant occupation. Viper snake bites are common than other poisonous snake bites in humans. According to World Health Organization there are approximately 1,25,000 deaths amongst 2,50,000 snake bites every year worldwide, out of which India accounts for more than 10,000 deaths. Acute kidney Injury (AKI) is a major complication of snake bite and its adequate supportive management with antisnake venom administration is of high importance, for a good patient outcome.

AIMS AND OBJECTIVES: To Study The Clinical Profile Of Renal Dysfunction In Snake Bite Patients In A Tertiary Care Centre

STUDY DESIGN: This is a descriptive and retrospective type of study.

RESULTS: The study includes 50 cases admitted in the hospital from August 2017 to August 2018. In our study, viper bite was more common and was seen in 31 cases.

Majority of the patients who had renal dysfunction had visited traditional healers intially before visiting the hospital. Patients who developed Renal dysfunction had more "Bite to Needle" time. Out of 29 patients who suffered from Renal dysfunction, 21 patients survived.

CONCLUSION: This study concludes that Renal Dysfunction occurs in the victims of snake bite if timely intervention is not done. The common complications include sepsis, shock, bleeding manifestations, cellulitis, and gangrene at the site of the bite.

KEYWORDS

INTRODUCTION

Snake bite is one of the common emergencies encountered in our emergency practice and is more common in tropical india where farming is predominant occupation. Viper snake bites are common than other poisonous snake bites in humans. Poisonous snakes belong to the families, Elapidae, Viperidae, Hydrophidae and Colubridae.[1] According to World Health Organization there are approximately 1,25,000 deaths amongst 2,50,000 snake bites every year worldwide, out of which India accounts for more than 10,000 deaths.[2,3] Renal Dysfunction is mainly observed by the snakes which belong to the vipers group and it is comparitevely less with sea snakes and snakes of the Colubridae group. Most of the victims in India are of Russell's viper which cause AKI.[4,5] Cortical necrosis & Tubular necrosis are the main causes of AKI.[6]

Acute kidney Injury (AKI) is a major complication of snake bite and its adequate supportive management with antisnake venom administration is of high importance, for a good patient outcome.

MATERIALS AND METHODS

1- This retrospective study is carried out at Krishna Institute of Medical Sciences, Karad, Maharashtra

INCLUSION CRITERIA

1. A confirmative history of snake bite
2. Clinical picture consistent with snake bite, such as the presence of fang marks/ neuroparalysis /coagulopathy
3. Presence of Renal dysfunction which is an abrupt (within 48 hours), increase in serum creatinine concentration of . 0.3 mg/dL from the baseline which is measured at the time of admission or just after the snake bite, or increase in the serum creatinine 50% above the baseline or urine output less than 0.5 mL/kg per hour for more than six hours or oliguria (urine output of less than 400 mL/day).[7]

EXCLUSION CRITERIA

1. Patients with Pre existing renal disease or USG S/o of Bilateral shrunken kidneys or loss of corticomedullary differentiation or obstructive uropathy or any other renal pathology.
2. Known cases of diabetes mellitus/hypertension
3. Exposure to Nephrotoxic drugs

Detailed history and Physical examination was performed. The laboratory investigations included total and differential leucocyte counts, haemoglobin, platelet counts, bleeding and clotting times, the coagulation profile , urine for microscopy, urine for albumin, liver function tests and serum electrolytes. The radiological investigations - X-ray chest and USG Whole abdomen was done. All patients were given tetanus toxoid. Cases were classified as mild, moderate and severe.

Anti-Snake Venom (ASV) was given in a dose of 50ml in mild cases, in a dose of 50-100ml in moderate cases and in a dose of 100-200ml as an intravenous infusion over 30 minutes. Antibiotics and diuretics were given as per the clinical indications. Blood and Blood product transfusion was done wherever indicated. Hemodialysis was provided to 12 patients. Follow up was done till discharge.

Patients were divided into two groups based on the presence or absence of renal dysfunction. Statistical Significance was calculated using Chi Square test, Probability test or t test wherever applicable.

RESULTS

A total of 50 cases of Snake bite were included in this study.The demographic profiles of the snake bite patients are as follows-

	Renal Dysfunction (n=29)	No Renal Dysfunction (n=21)
Age	38+/-7.1	35+/-9.5
Gender	18(M)11(F)	13(M)8(F)
Viper(n=31)	18	13
Elapidae(N=19)	8	11

In our Study, In patients with renal dysfunction (n=29), mean age is 38+/-7.1 with 18 males and 11 females. Out of which 18 patients of viper bite and 8 patients of Elapidae bite had renal dysfunction.

In patients with no renal dysfunction (n=219), mean age is 35+/-9.5 with 13 males and 8 females. Out of which 13 patients of viper bite and 11 patients of Elapidae bite had no renal dysfunction.

Clinical Profile of the patients are as follows-

	Renal Dysfunction (n=29)	**No Renal Dysfunction (n=21)**	**P value**
Cellulitis	8	2	p<0.01
Bleeding manifestations	16	9	p<0.01
Gangrene	6	2	p<0.01
Shock	21	13	p<0.01
Sepsis	23	16	p<0.01
ARDS	11	11	p<0.01

In our study, In Patients of renal dysfunction(n=29), 8 patients had cellulitis, 16 had bleeding manifestations, 6 had gangrene, 21developed shock, 23 had sepsis and 11 patients had ARDS. Hemodialysis was required in 12 patients of renal dysfunction.

In Patients without renal dysfunction(n=21), 2 patients had cellulitis, 9 had bleeding manifestations, 2 had gangrene, 13 developed shock, 16 had sepsis and 11 patients had ARDS.

8 Patients with renal dysfunction died to rapidly progressing renal failure, uremia, sepsis and shock while 2 patients without renal failure died due to severe sepsis, shock and bleeding manifestations.

DISCUSSION

Snake bites are one of the common medical emergencies encountered in hospitals. Timely management and administration of ASV saves lives. Complications like cellulitis, gangrene, bleeding manifestations, sepsis, shock etc can be managed if bite to needle time is reduced.

in farming and other outdoor activities. Our findings were concurrent with those of earlier studies.[8,9] In our study more patients presented with Viper bites out of which majority had renal dysfunction which is similar to the study by Ali et al.[10] in which AKI was seen in 17% of the snake bite patients, which is comparable to our study.

Sepsis and shock was common in patients of renal dysfunction which is comparable to study by Chugh K.S et al.[3] The mortality in our study was 20% i.e 10 patients and was more in patients with renal dysfunction. Patients who had undergone hemodialysis showed considerable improvement with respect to renal function, electrolyte imbalance , acidosis.

dia (22-50%).[11] The patients who had recovered from renal dysfunction had a shorter bite to needle time which is similar in observation of the study of Sharma et al.[12]

LIMITATIONS

The study included a small sample size and lack of renal biopsy and other detailed investigations like ELISA, D-Dimer could not be done due to financial constraints of the patients.

CONCLUSION

The study mainly elaborates the complications and clinical profile of patients of snake bite with or without renal dysfunction. Renal dysfunction is one of the major complications of snake bite. Timely management with ASV and other supportive measures improve survival rate. Indications for hemodialysis included anuria for more than 48 hours, severe acidosis, electrolyte imbalance and rapidly progressive renal failure. Lastly, narrow “Bite to Needle time” is the mainstay of treatment.

REFERENCES

1. Al-Homrany M. Acute renal failure following snake bites: a case report and review of the literature. Saudi J Kidney Dis Transpl. 1996;7:309–12
2. Chippaux JP. Snakebites: Appraisal of the global situation. Bull World Health Organ. 1998;76(5):515–24
3. Chugh KS, Pal Y, Chakravarthy RN, et al. Acute renal failure following poisonous snake bite. Am J Kidney Dis. 1984;4(1):30–38
4. Albright RC Jr. Acute renal failure; A practical update. Mayo Clin Proc. 2001;76(1):67–74
5. Norris RL, Auerbach PS. Disorders caused by reptile bites and marine animal exposure, Harrison’s Principles of Internal Medicine, 19th Edition
6. Mittal BV. Acute renal failure following poisonous snake bite. J Postgrad Med. 1994;40(3):123–26.
7. Norris RL, Kellum JA, Shah SV, Molitoris BA, Ronco C, Warnock DG, Levin A. Acute Kidney Injury Network: report of an initiative to improve outcomes in acute kidney injury. Crit Care. 2007;11(2):R31
8. Saini RK, Sharma S, Singh S, Gupta VK, Pathania NS. Primary pathological fibrinolysis in saw-scaled (Echiscarinatus) viper bites. J Assoc Physicians India. 1984;32:391–93
9. Hati AK, Mandal M, De MK, Mukherjee H, Hati RN. The epidemiology of snake bites in the district of Burdwan, West Bengal. J Indian Med Assoc. 1992 Jun;90(6):145–47.
10. Ali G, Kak M, Kumar M, Bali SK, Tak SI, et al. Acute renal failure following echis carinatus (saw – scaled viper) envenomation. Indian J Nephrol. 2004;14:177–81.
11. Athappan G, Balaji MV, Navaneethan U, Thirumalikolundusubramanian P. Acute renal failure in snake envenomation: a large prospective study. Saudi J Kidney Dis Transpl. 2008;19(3):404–10
12. Sharma SK, Koirala S, Dahal G, Sah C. The clinico-epidemiological features of snakebite: a study from eastern Nepal. Trop Doct. 2004 Jan;34(1):20–22