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General Medicine

PRE-TREATMENT WITH LOW DOSE SUBCUTANEOUS ADRENALINE TO PREVENT ADVERSE REACTIONS TO ANTI SNAKE VENOM FOLLOWING SNAKE BITE

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ABSTRACT **Aim and objective :** To assess the efficacy of low dose subcutaneous adrenaline to prevent adverse reactions to Anti Snake Venom (ASV) in hospitalised patients following snake bite. **Methods :** Hospitalised patients following snake bite requiring ASV were randomised to receive either 0.25ml 1:1000 dilutions adrenaline subcutaneously or placebo as pre-treatment before ASV administration. Pregnants, age less than 12 years and more than 70 years, patients who received ASV in the past, history of adverse reactions to adrenaline, patients with obstructive airway disease, ischemic heart disease, stroke and patients who received ASV before hospital admission were excluded from the study. **Results :** 50 patients were included in the study. 26 patients received low dose subcutaneous adrenaline and 24 patients received placebo. 3 patients(11%) in adrenaline group and 13 patients(54%) in placebo group developed adverse reactions following ASV administration. **Conclusion :** 0.25ml 1:1000 dilutions subcutaneous adrenaline given immediately before ASV administration reduces incidence of adverse reactions to ASV.

KEYWORDS : adrenaline, anti snake venom, snake bite

Introduction :
Anti snake venom (ASV) is the only available effective treatment for snake bite victims. Adverse reactions occur frequently following ASV administration and anaphylaxis could be fatal. On an average more than 50 % of patients receiving ASV develop adverse reactions. Increasing the safety of treatment with ASV for snake bite victims is of top priority. A major concern with the use of adrenaline is risk of intracerebral haemorrhage due to coagulopathy induced by some snake venom and hypertension caused by adrenaline.

Aim and objective :
To assess the efficacy of low dose subcutaneous adrenaline to prevent adverse reactions to ASV in hospitalised patients following snake bite.

Methods :
It was a prospective study conducted in Department of General Medicine, Government medical college, Anantapur from january 2022 to October 2022.

Inclusion criteria :
Hospitalised patients following snake bite with local envenomation or systemic envenomation or both, requiring ASV administration.

Exclusion criteria :
1) Pregnants,
2) Age less than 12 years and more than 70 years,
3) Patients who received ASV in the past,
4) History of adverse reations to adrenaline,
5) Patients with obstructive airway disease, ischemic heart disease, stroke
6) Patients who received ASV before hospital admission.
Hospitalised patients following snake bite requiring ASV were randomised to receive either 0.25ml 1:1000 dilutions adrenaline subcutaneously or placebo as pre-treatment before ASV administration. They were observed for adverse effects from adrenaline, and pulse and blood pressure (BP) were recorded before, and every 10 minutes for up to 60 minutes after adrenaline was given.

Results :
50 patients with local envenomation and systemic envenomation following snake bite, requiring ASV were included in the study. 30 were male and 20 were female. Offending snake was identified in 28 patients(56%). 26 patients received low dose subcutaneous adrenaline and 24 patients received placebo. 3 patients(11%) in adrenaline group and 13 patients(54%) in placebo group developed adverse reactions following ASV administration.

	Adverse reactions	No adverse reactions	Total
Adrenaline group	3(11%)	23(89%)	26
Placebo group	13(54%)	11(46%)	24

Urticaria is the most common adverse reaction following ASV administration. In this study 13 patients, 3 patients in adrenaline group and 10 patients in placebo group devoloped urticaria following ASV administration. Bronchospasm occurred in 4 patients. Hypotension occurred in 5 patients. Bronschospasm, hypotension and tachycardia occurred only in placebo group. No patients sufferred intracerebral hemorrhage in this study.

	Adrenaline group	Plaebo group	Total
Urticaria	3	10	13
Bronchospasm	0	4	4
Hypotension	0	5	5
Tachycardia	0	5	5

No significant changes in post treatment pulse rate, systolic blood pressure and diastolic blood pressure recordings were observed in the adrenaline group that can be attributed to adrenaline.

Discussion :
Pre-treatment with subcutaneous adrenaline reduced the incidence of adverse reactions following ASV administration in snake bite victims. No significant changes in post treatment blood pressure recordings occurred, when compared to pre treatment blood pressure recordings in the adrenaline group. No significant side effects attributable to adrenaline were encountered. No patients sufferred intracerebral hemorrhage. However, it must be pointed out, the individuals at risk of side effects attributable to adrenaline were excluded from the study.

Study by Premawardhena et al, showed similar results. 56 patients received adrenaline and 49 patients received placebo. 6 adrenaline group patients and 21 placebo group patients developed adverse reactions to ASV(1). Results in a study by Poovazhagi et al, in paediatric age group also showed the results that were in according with the results found in our study. 8 among 21 children in adrenaline

group and 18 among 30 children in placebo group developed adverse reactions to ASV(2).

Conclusion :

Pre-treatment with 0.25ml 1:1000 dilutions subcutaneous adrenaline given immediately before ASV administration reduces incidence of adverse reactions to ASV and increases the safety of ASV.

REFERENCES :

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