



EFFECTIVENESS OF ALOE VERA EXTRACT APPLICATION ON LEVEL OF PHLEBITIS AMONG PATIENT WITH INTRAVENOUS INFUSION

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Abstract

Alovera extract is a gel form of aloe plants which contains 75 potentially active constituents and have several pharmacological actions. This study was conducted to assess the effectiveness of aloe vera extract on level of phlebitis among patient with intravenous infusion.

60 subjects were selected in experimental & control group (30 in each group) by using convenience sampling technique. The finding revealed that the mean pretest score was 15.03 and post test score was 5.17 in the experimental group. In control group, the mean pretest score was 8.67 and post test score was 7.87. The effectiveness of alovera extract application was statistically tested and the result was found to statistically significant at $p < 0.0001$ level. Therefore alovera extract application is beneficial for the prevention of inflammation and treat infusion phlebitis.

Key words: Aloe vera extract, patients with intravenous infusion, phlebitis

Introduction:

Peripheral intra venous infusion (PIVI) is the most frequently performed procedure in hospital settings. Peripheral vein catheters are required for administration of intravenous drugs, infuscate solutions, blood products and parenteral feeding. (Hema joshi, 2021) 80% of hospitalized patients receive intravenous therapy at some point during their admission. Globally 60% of patients develop intravenous complications. In developed countries approximately 1,25,000 complications reported yearly. The complication rate in India is between 78-82% and in Tamilnadu is 85%. (S. Selva rajeswari, 2020)

Phlebitis means inflammation of a vein. It is clinically manifested by pain, erythema, swelling, palpable venous cord, and pussy discharge at canulation site. Aloe vera is gel from the leaves of aloe plants. Aloe vera contains 75 potentially active constituents some of which have several pharmacological actions. These

include the carboxyl peptidase that inactive bradykinin, salicylates and substances that inhibit local vasoconstriction. The anti-inflammatory compound called C-glucosyl chromone has been isolated from gel extracts. The mechanism of action of Aloe vera includes healing properties, anti-inflammatory activity, effects on the immune system, moisturizing and anti-aging effects and antiseptic effects. Aloe may therefore be beneficial for the prevention and treatment of infusion phlebitis. (R. Morgan Griffin, July 2020)

The application of Aloe vera extract emphasize that importance of reducing phlebitis effects. Hence Aloe vera extract does not take much time requires no special equipment except a preparation of Aloe vera gel. So the researcher was interested to observe the effect of a regular application of Aloe vera extract to reduce phlebitis effects for patient with intravenous infusion.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of aloe vera extract application on phlebitis among patient with intravenous infusion in selected hospital, Tiruvannamalai.

OBJECTIVES

- To assess the pre and posttest level of phlebitis in experimental and control group among patient with intravenous infusion.
- To compare the level of phlebitis within experimental and control group among patient with intravenous infusion.
- To compare the level of phlebitis between experimental and control group among patient with intravenous infusion.
- To associate the post test level of phlebitis among patients with intravenous infusion with their selected demographic variable in experimental and control group.

HYPOTHESES

NH₁: There is no significant difference in pre and posttest level of phlebitis within experimental and control group among patient with intravenous infusion at $P < 0.05$ level.

NH₂: There is no significant difference in pre and posttest level of phlebitis between experimental and control group among patients with intravenous infusion at $P < 0.05$ level.

NH₃: There is no significant association of post test level of phlebitis among patient with intravenous infusion with their selected demographic variable in experimental and control group at $P < 0.05$ level.

CONCEPTUAL FRAME WORK

The conceptual frame work was adapted for this study is LUDWING VON BERTALANFFY,S general system theory.

Research methodology**Research approach:** Quantitative research approach**Research design:** Non-equivalent control group pre and post-test design which is comes under quasi experimental design.**Variables:**

- Independent variable - Aloe vera extract application
- Dependent variable – phlebitis

Setting of the study: the study was conducted in Government Tiruvannamalai Medical College and Hospital, Tiruvannamalai district.**Sample:** patient with intravenous infusion**Sample size:** 60 patient with intravenous infusion (30 in experimental & 30 in control group)**Sampling technique:** Purposive sampling technique**Criteria for the selection of sample****Inclusion criteria:**

Patients who were,

- at age between 20-59 yrs
- able to read and write Tamil or English
- available during the study period
- willing to participate in study

Exclusion criteria:

Patients who were,

- physical and mental Impairment
- not willing to participate in study
- chronic systemic & vascular disease
- allergic to aloe vera.

DATA COLLECTION METHODS

The formal permission for conducting study was obtained from competent authorities. Reliability was established by using inter-rater method ($r = 0.82$). The investigator collected the data relative to demographic variables and conducted the pre test to assess the level of phlebitis by using modified visual phlebitis scale which includes pain, swelling, tenderness, warmth and redness for patient with intravenous infusion in experimental and control group. In experimental group the researcher administered the aloe vera extract for 15 min twice a day for 3 days. Control group was followed the hospital routine. Post test was conducted On 4th day for both the group.

Preparation for aloe vera extract: 1. Harvest aloe vera leaf from aloe vera plant 2. Wash the leaf and cut top third of the spines and peel off 3. Remove the thick, clear gel at the middle 4. Wash thoroughly and grind it 5. Make it as a gel form for further application

DATA ANALYSIS

Both descriptive and inferential statistics were used to analyse the data.

RESULTS AND DISCUSSION

The major findings of demographic variables

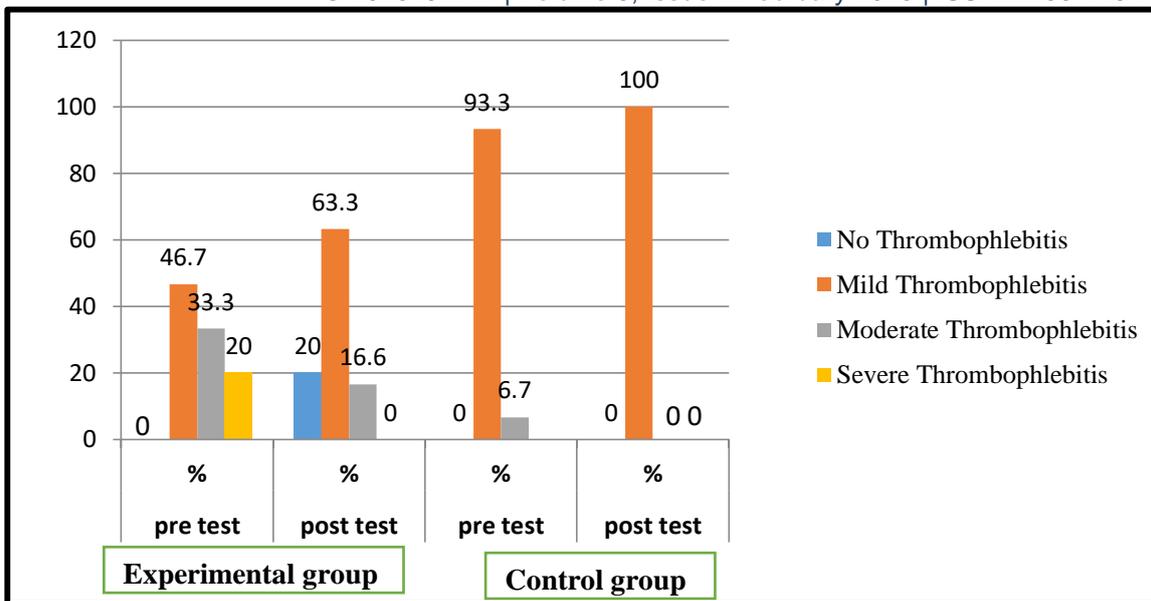
In experimental group, 10 (33.3%) were between the age group of 40- 49, 22 (73.3%) responds were male and completed primary & degree 5(16.7%), 28 (93.3%) belong to non- vegetarian, 22 (73.3%) were mobilized, about cannula inserted, 14 (46.7%) belong to upper surface of arm, 17 (56,7%) were under green colour of cannula, duration of cannula insertion is 16 (53.3%) were under 4- 5 days, arm of the cannulation were 16 (53.3%) left arm, frequency of medication 20 (66.7%) were twice a day and history of chronic vascular disease 26 (86.7%) belongs to absence of chronic vascular disease.

In control group 10 (33.3%) were between the age group of 30-39, 21 (70%) responds were male, 10 (33.3%) belong to degree, 19 (63.3%) belongs to non- vegetarian, 17 (56.6%) were mobilized, place of cannula inserted, 20 (66.6%) were under lateral side of fore arm. colour of cannula, 15 (50%) belong to green and blue, 19 (63.3%) were under duration of cannula insertion is 2- 3 days, 21 (70%) were taking frequency of medication is twice a day and history of chronic vascular disease 25 (83.3%) belongs to absence of chronic vascular disease.

Domine wise pre and post test mean value of experimental and control group

DOMAINS	Experimental		Control	
	Pre test	Post test	Pre test	Post test
Pain	2.96	1.98	2.31	2.42
Swelling	2.07	1.43	1.66	1.35
Tenderness	2.05	1.73	1.43	1.14
Warmth	2.43	1.62	1.53	1.23
Redness	2.03	1.51	1.56	1.81
Total	12.89	8.17	8.49	7.95

Assessment of phlebitis among patients with intravenous infusion in experimental and control group



Comparison of pre and post test level of phlebitis among patients with intravenous infusion within experimental and control group.

S. No	Group	Assessment	Mean	SD	Paired 't' test
1	Experimental	Pre Test	12.89	4.28	t=5.78 S**
		Post Test	8.49	3.03	
2	Control	Pre Test	8.17	2.83	t=1.24 NS
		Post Test	7.95	2.21	

S**- Significant at P<0.001 level, **NS**- Non Significant at P<0.05 level

Comparison of pre and post test level of phlebitis among patients with intravenous infusion between experimental and control group.

S. No	Assessment	Group	Mean	SD	Unpaired 't' test
1	Pre test	Experimental	12.89	4.28	t=0.61 NS
		Control	8.17	2.83	
2	Post test	Experimental	8.49	3.03	t=5.34 S***
		Control	7.95	2.21	

The study was supported by Rangalakshmi (2018) conducted an experimental study to assess the effectiveness of Aloe vera gel application on thrombophlebitis among patients received intravenous therapy. Sixty individuals with thrombophlebitis were recruited by simple random sampling technique into two groups and pre test assessment was done. Experimental group (N=30) received Aloe vera gel application is the intervention over the site of thrombophlebitis for 15 minutes twice a day for 3 days. Post test was done with the modified Visual Infusion Phlebitis Scale on the fourth day for both groups. Statistical findings revealed that the post test mean score of thrombophlebitis in experimental group was 6.4±1.2 whereas in the control group it was 8.6±1.2. The

mean difference was 2.2 and the calculated unpaired 't' value 6.79 was found statistically significant at $p < 0.001$ level. The study concluded that, The use of Aloe vera gel application is found effective in reduction of thrombophlebitis among patient received intravenous therapy.

Conclusion

The study concluding that, aloe vera extract application on phlebitis among patients with intravenous infusion is effective and significant improvement in phlebitis patients. Therefore aloe vera extract application have no side effects, no cost effective and easy to access for all the people. Aloe vera extract can used as a part of nursing intervention in preventing the further complication due to phlebitis.

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