

Study into pain management of phlebitis



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Intravenous therapy is an infusion of medicine and fluids into a vein. IV therapy is essential part of clinical use. There are also complications which included in IV infusion are local and systemic, local include thrombophlebitis, infiltration, extravasations, nerve injury and systemic include bacteremia, septicemia, emboli, thrombus, circulatory overload etc .

Thrombophlebitis," Thrombo" means " clot" " Phlebo" means " vein" and " itis" means inflammation. Thrombophlebitis refers to the presence of a clot plus inflammation in the vein. Phlebitis is defined as the acute inflammation of internal lining of the vein Infusion Nursing Standards of Practice (2000).

According to international association of pain (IASP) (1994), " pain is an unpleasant sensory experience associated with actual and potential tissue damage".

The pain is classified as nociceptive, neuropathic, acute and chronic pain. The nociceptive pain is caused due to damage to somatic or visceral tissue damage which pain from surgical incision , a broken bone, or arthritis , the neuropathic pain is caused by damage to peripheral nerves or CNS which include trauma, inflammation , metabolic diseases like diabetes mellitus, tumors, toxins, and neurologic diseases such as multiple sclerosis and acute pain is due to post operative pain , labour pain, and pain from trauma and the chronic pain is for longer periods due to cancer.

Pain is a highly unpleasant and professional sensation that cannot be shared with others. It can occupy all a personal thinking, direct all activities and change a person. Yet pain is a difficult concept for a client to communicate. Pain is universal experience its exact nature becomes mystery. Unrelieved

pain presents both physiological and psychological hazards to health and recovery. Care givers should include assessment of pain as a fifth vital sign to emphasize its significance and to increase the awareness among the health care professional of the importance of effective pain management. There are many non pharmacological measures which is provided including massage, exercise, transcutaneous electrical nerve stimulation, percutaneous electrical nerve stimulation, accupunture heat therapy, cold therapies, and cognitive therapies including distraction , hypnosis and relaxation strategies.

Edema which is the accumulation of fluid in subcutaneous tissue due to extracellular volume expansion. There is swelling of tissues which can be demonstrated by pressing lightly with the thumb over a bony prominence especially on dorsum of feet and around the ankles. The types of edema include hydrostatic edema, oncotic edema, inflammatory and traumatic edema and lymphatic edema.

Phlebitis can be classified into 3 three categories which include mechanical, chemical and bacterial where mechanical is due to the size of cannula is too big for the selected vein causing unnecessary friction on the internal lining leading to inflammation, chemical phlebitis is due to peripheral IV devices when the medication or solution irritate the endothelial lining of the small peripheral vessel wall and bacterial phlebitis is usually precursor to an infection at the infection site. Thrombophlebitis is evident by localized pain, redness, warmth, and swelling around the insertion site or along the path of the vein, immobility of the extremity because of discomfort and swelling.

Non pharmacological treatment includes discontinuing the IV, applying a warm compress, elevating of the extremity, and restraining the line in the opposite extremity . In the presence of signs and symptoms of thrombophlebitis, one should not attempt to irrigate the line.

Pharmacological and non pharmacological agents are available for relief of pain, edema and inflammation. The cost and side effects are comparatively high in modern medicine. The number of client seeking unconventional treatment has risen considerably. Nonpharmacological therapies, natural therapies, cryotherapies, and aromatherapies are available with less expensive and fewer side effects. Likewise in combact alovera gel is also very much used in reducing pain, edema and severity of inflammation.

For local treatment in order to relieve pain, edema and severity of inflammation alovera gel can be used. Since in the era of Ancient Egypt humans having using aloe. They used one of the ingredients of embalming fluid. In the tenth century, the Europeans were introduced, where it became an important ingredient in many herbal medicines. By the sixteenth century, aloe arrived in the West Indies, where still today it is harvested.

Alovera is one of the therapeutic herbs as a healing plant. The uses of aloe of popularized in 1950's itself. There are over 300 different types of aloe, but only a few were used traditionally as an herbal medicine. In the middle ages the yellowish liquid found inside the leaves was a favored as purgative.

Alovera gel is the mucilaginous gel produced from the centre (the parenchyma) of the plant leaf. It contains 400 species. The gel portion of the plant is prepared by peeling the outer portion of the skin and the pericarp

away. It is preparation which is called pure aloe vera gel in commerce.

Aloe vera is thick, tapered with spiny leaves grow from a short stalk near ground level. It is not a cactus, but a member of the tree lily family known as Aloe Barbadensis. Some species, in particular Aloe vera are used in alternative medicine and in home first aid. Both the translucent inner pulp and the resinous yellow exudates from wounding the Aloe plant are used externally to relieve skin discomforts. The gel found in the leaves is used for soothing minor burns, wounds and various skin conditions like eczema and ringworm.

Aloe vera gel has both antimicrobial and anti-inflammatory effects. The constituents include gibberlin, lectins, lignins, glucose, mannose, glucuronic acid other polysaccharides including galactogalacturans and galactoglucoarabinomannans. The most abundant constituent is water (99%). The aloe vera gel contains anti-inflammatory agent gibberlin and polysaccharides which effectively decrease inflammation and promote healing. Aloe vera effectively relieves pain because it contains salicylic acid. Aloe vera contains lignin which helps to penetrate deeply into skin to deliver its therapeutic effects.

Most of the nursing interventions fit comfortably within the realm of the natural therapy's the illness healing paradigm shift and converge, and role of nurses shifts can give to the healer. Therefore aloe vera gel could be a suitable intervention which helps the nurse to reduce pain, edema and phlebitis.

NEED FOR THE STUDY

IV therapy has become a pervasive world wide as a routine therapy. Nurses yearly still insert, use and monitor millions of peripheral venous catheters (PVC). To diagnose and assess phlebitis severity is essential as a way to prevent a host of severe complications such as septic phlebitis, bacteremia, septicemia, arthritis, osteomyelitis eventually leading to death. However it is still prone to associated complications, of which phlebitis is most common, with prevalence varying between 20% to 80% Workman (2000).

Villicampa (2008) Spanish review a national multicentric epidemiological study having the institutional participation of 10 centres. In this study 381 complications appears in the 2701 peripheral catheters studied which represents an incidence level of 14. 11%. They reviewed 8700 treatment records this study proved that implementation of strategies to improve the quality of care reduces non instrumental complication persistent pain at the entrance point , extravasations of edema, second or third degree phlebitis and infection associated with catheters.

Nassaji Zaveareh (2007) conducted a prospective study on peripheral interventions catheter related factor . In this study 300 patients admitted to medical and surgical wards from April 2003 to Feb2004 were participated. Variables evaluated were age , gender, site and size of catheter , type of insertion and underlying condition were observed for 3 days continuously. Out of that 26 % occurred phlebitis . There were no significant relationship between age catheter bore size trauma and phlebitis. Related risk factors were gender, ie., female site and type of insertion of catheter, diabetes

mellitus and burns. Important role of nurse is to control pain that of thrombophlebitis.

The quality of care received in the hospital was often reflected in client care. Among paramedical profession, nursing personals were inserting intravenous line, monitoring, administering intravenous fluids and administering medicines. Maintenance of peripheral intravenous cannulae and removal of peripheral cannulae was an integral component of nursing care.

Nordell, et al.,(2002)in a study of 52 patients, found 5 diagnosed cases of thrombophlebitis (10%) . Out of fifty two patients twenty six hand or wrist venipunctures, he found 3 with thrombophlebitis. Also he had done Fifteen forearm punctures produced the other 2 cases of phlebitis while of the eleven patients undergoing antecubital fossa venipuncture, none were found to have developed thrombophlebitis.

The reported incidences of thrombophlebitis vary from a low of 2% 21 up to 15%. 33. One well-controlled Swedish study of over 1000 cases reported venous complications of many types at 31% is having thrombophlebitis.

Singh , Bhandary (2007) , Dhulikhel Hospital Kathmandu University Teaching Hospital, Nepal carried out a prospective observational study to determine the occurrence of peripheral intravenous catheter related phlebitis and to the possible factors associated to its development. A total 230 patients under intravenous catheter were selected peripheral infusion site was examined for signs of phlebitis once a day using jackson Standard visual phlebitis scale and the result obtained was 136(59. 1%)patients developed thrombophlebitis. Related risk factors as found in the present study were

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insertion site (forearm), size of catheter (20G) and dwell time (≥ 36 hours). There were higher incident of phlebitis among the client with Intra venous drug administration and especially between ages 21 - 40 years. Therefore more attention and care are needed in these areas by the care provider.

In another study the overall phlebitis rate was 39%. Phlebitis developed in 53% of patients with short lines, in 41% of patients with midsized lines, and in 10% of patients with long lines, and these catheters remained in place an average (\pm SD) of 3.0 ± 2.4 days, 4.6 ± 3.4 days, and 7.8 ± 6.6 days, respectively. The variables that influenced the development of phlebitis, as determined by multivariate analysis, type of catheter, blood hemoglobin levels, and IV therapy with either corticosteroids or erythromycin

Lutter et al., conducted a retrospective survey to identify the complication of venous catheterization in the left lower limb and right lower limb for 1, 143 patients. Patients occurred phlebitis in 56% in left lower limb 51% in right lower limb.

Aloevera has salicylic acid which include in analgesic effects, it contains lignin which helps to penetrate deeply into skin to deliver the therapeutic effects, it contain anti-inflammatory agent gibberlin and polysaccharides which decrease inflammation and promote healing.

Netherlands, conducted a prospective study on treatment of superficial thrombophlebitis with aloevera gel in relieving the local pain, swelling and redness. In this 116 patients were selected with thrombophlebitis and applied for a period of 3 days. The efficacy of aloevera was recorded. There

is a drastic improvement in patient received aloe vera gel as treatment than the control group Winchers IM (2005).

The investigator selected this study because during her clinical experience has observed the many patients who had admitted in the hospital with cannula, developed the catheter related complications such as blockage, pain, redness and thrombophlebitis. This incidence insists the investigator to do some intervention to overcome this problem. Nurses need to be equipped with current interventional skills in relieving the pain, edema severity of inflammation and to prevent and treat complications. Hence the investigator interested in assessing the effectiveness of aloe vera gel in thrombophlebitis patients in reducing pain, edema, and severity of inflammation.

STATEMENT OF THE PROBLEM:

A study to assess the effectiveness of aloe vera gel in reducing pain, edema and severity of inflammation among thrombophlebitis patients in selected hospitals at Kanyakumari District May 2010.

OBJECTIVES

To assess the pretest level of pain, edema and severity of inflammation for the experimental and control group.

To assess the post test level of pain, edema and severity of inflammation in experimental and control group.

To compare the pre test level of thrombophlebitis between experimental and control group.

To compare the posttest level of thrombophlebitis between the experimental and control group.

To compare the pre and post test level of thrombophlebitis for both the experimental group.

To compare the pre and post test level of thrombophlebitis for both the control group.

To associate the post test level of thrombophlebitis of the experimental and control group with their selected demographic variables.

OPERATIONAL DEFINITION

Assess

Systematically and collecting, validating and communicating the patient data.

Effectiveness:

In this study effectiveness means reduction of pain and edema and severity of inflammation of thrombophlebitis patients after the administration of aloe vera gel.

Pain

Refers the discomfort and irritability felt by the patient intravenous infusion site due to inflammation of vein and it is assessed by numerical pain scale.

Edema

Refers to the swelling in the infusion site and assessed by edema scale.

Phlebitis:

Refers to the redness which is occurred due to the intravenous infusion and is assessed by phlebitis scale.

Aloeveragel:

Refers to green leaves when it is teared which contain semi solid liquid and is applied in affected site.

ASSUMPTION

Pain, edema and severity of inflammation among thrombophlebitis can be reduced in adults by applying Aloveragel.

Patient with thrombophlebitis at intravenous infusion site have pain , edema and inflammation .

HYPOTHESIS

RH1 – There is a significant difference in pre test level of pain, edema and severity of

inflammation between experimental and control group.

RH2 – There is a significant difference in post test level of pain, edema and severity of

inflammation between experimental and control group.

RH3 – There is a significant difference in pre and post test level of pain, edema and

severity inflammation among thrombophlebitis patients in experimental group.

RH4 – There is a significant difference in pre and post test level of pain, edema and severity of inflammation among thrombophlebitis patients for control group.

RH5 – There is a significant association of post test level of pain, edema and severity of

inflammation among thrombophlebitis patients with their selected demographic

variables (age, sex, site, duration etc).

DELIMITATION

The study is delimited for 4 weeks of data collection.

The study is limited to a sample of 60 adults.

CONCEPTUAL FRAME WORK

Conceptual model presents certain views of phenomena in the world that have profound influences on our perception of that world. A model is a simplification of reality or representation of reality. Concepts in the model builds consider relevant and as aids to understanding.

The study is mainly focused to find out the effectiveness of aloeveragel in reducing pain, edema and severity of inflammation among thrombophlebitis patients. In order to reduce pain, edema and severity of inflammation aloveragel was applied.

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The investigator adopted the King's Goal Attainment theory (1980) as a base for developing the conceptual framework. Imogene King's Goal attainment theory is based on the personnel and interpersonal systems, including interaction, perception, communication, transaction, role, stress, growth and development, time and action.

PERCEPTION:

Refers to person representation of reality. It is universal yet highly subjective and unique to each person. Hence the investigator perception was peoples may have pain, edema and severity of inflammation

JUDGEMENT:

The investigator judged that application of aloeveragel reduces pain, edemaand severity of inflammation thrombophlebitis patients. The investigator to judge the need to reduce the level of pain, edema and severity of inflammation.

ACTION:

The investigator applied aloeveragel. The thrombophlebitis patient willingness to accept aloeveaagel and participate in the study.

REACTION:

The investigator and to asset mutual goal setting.

INTERACTION:

Refers to verbal and non verbal behavior of individual and the environment or two or more individual with a purpose to achieve goal. It includes the goal

directed perception and communication. Here the investigator interacts with the thrombophlebitis patient by giving aloe vera gel applied 3 times per day.

TRANSACTION:

Refers to an observable, purposeful behavior of individual interaction with their environment to achieve the desired goal. At this stage the investigator analyzes the pain, edema and severity of inflammation among thrombophlebitis patients in order to administer aloe vera gel application. The positive outcome in post test is the reduction of pain, edema and severity of inflammation which indicate the aloe vera gel application.

OUT LINE OF THE REPORT

The report is divided into 6 Chapters:

Chapter I – dealt with background of the study, need for the study, statement of the problem, objectives, operational definitions, research hypotheses, assumptions, delimitations of the study, conceptual framework and outline of the report.

Chapter II – relates with review of related literature pertaining to various areas of study.

Chapter III – contains with the research design, variables, setting of the study, population, sample, sample size, sampling technique, criteria for sample selection, development and description of the tool, content validity, reliability of the tool, pilot study, procedure for data collection and analysis of the study.

Chapter IV – presents the data analysis and interpretation of data

Chapter V – relates with discussion based on the findings of the study.

Chapter VI – includes summary, conclusions, nursing implications, limitations and recommendations of the study.

The report ends with bibliography and appendices.