Hot Fomentation Versus Cold Compress for Reducing Intravenous Infiltration

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Today in any hospital in intravenous therapy has become a major component of patient care. In hospital practice intravascular lines are used for various purposes for recording pressures and to administer drugs and fluids. A common problem encountered in intravenous fluid administration is the infiltration of the fluids into tissues near the point of entry of the catheter into the veins or arteries (vascular system). Infiltration is often due to patient movement and disruption of the vein or artery at the site of insertion of the catheter. This may lead to discoloration, discomfort and tissue destruction as well as lack of delivery of the intravenous fluids or drugs into the patient’s system. The most common complications of peripheral venous catheterization are infiltration; this results in an inflammatory reaction, which is manifested as pain, swelling, and erythema prolongs the duration of hospital stay.

A study was conducted on, “A comparative study to assess the effectiveness of hot fomentation versus cold compress for reducing intravenous infiltration in patients admitted in selected hospital of Pune city.”

Objectives:
♦ To assess the degree of intravenous infiltration in selected patients.
♦ To determine the effect of hot fomentation for reducing intravenous infiltration.
♦ To determine the effect of cold compress for reducing intravenous infiltration.
♦ To compare the effectiveness of hot fomentation versus cold compress for reducing intravenous infiltration.
♦ To correlate the findings with selected socio-demographic variables.

Conceptual Framework:
This study adopted the General System Theory as the theoretical base for the framework of the study.

Assumption:
The hot fomentation and cold compress reduces local signs and symptoms of infiltration on intravenous site and promote comfort of the patient.

Hypothesis:
H0: There will be no difference in the effect of hot fomentation versus cold compress for reducing intravenous infiltration.
H1: Hot fomentation will be better than cold compress for reducing intravenous infiltration.
H2: Cold compress will be better than hot fomentation for reducing intravenous infiltration.

Limitations:
♦ Time limited study.
♦ Limited sample size.
♦ Study limited to mild or moderate infiltration.

Research Methodology:
♦ The design was quasi-experimental, pre-test-post-test used.
♦ The sample size for the study was 60.
♦ Data collection tools included an observational checklist. For generating necessary data, an observational checklist was developed which consisted of standardized infiltration scale for assessing degree of infiltration and behavioral pain scale for assessing intensity of pain.

Based on the objectives and the hypotheses, data was analyzed by using descriptive and inferential statistics i.e. percentage, mean, and standard deviation. The t-tests and Chi-square was applied to test the hypothesis and compare the effectiveness of hot fomentation versus cold compress for reducing intravenous infiltration.

Major Findings:
Findings of study shows that in the hot fomentation group majority (53.3%) of samples were in age group of 51-60, with male and female equal in numbers and maximum (40.0%) were educated up to the primary level and had the I/V line for three days. In cold compress group, majority...
(30.0%) samples were from age group between 20-31 and 51-60, majority of 56.6% were females, maximum (50.0%) were educated up to secondary level and had the I/V line for four days. In both the groups, majority of patients (53.3%) stayed in Hospital between 8-14 days.

Findings show that in both the groups, majority (43.3%) of sample had I/V line present on the dorsal aspect of left hand palm. And majority (83.35%) & (63.3%) sample had intravenous infiltration for 3 days. In both the groups, signs and symptoms of phlebitis were present at the time of starting treatment.

Findings prove that the pretreatment mean score of degree of infiltration was 7.1667 and it was decreased to 0.7071 on the third day of treatment with hot fomentation.

In cold compress group, pretreatment mean score of degree of infiltration was reduced from 6.9333 to 0.7571 on the third day of treatment with cold compress treatment:

- The intensity of pain was reduced from severe (56.60%) to no pain (93.4%) in hot fomentation group. In cold compress group, the intensity of pain was reduced from moderate (60.0%) to no pain (86.8%).

The mean score of hot fomentation group was 6.5067 in reducing the degree of infiltration while cold compress the mean score was 6.4. It proves that the hot fomentation is slightly better than the cold compress.

- It was found that the age group, sex, education, no of days I/V line present, site of intravenous line, duration of hospitalization and signs and symptoms of phlebitis shows no significant relationship with the treatment outcome in relieving intravenous infiltration in both the groups while duration of infiltration and length of infiltration show significant relationship with the treatment outcome in both the groups.

These findings indicate that the hot fomentation and cold compress both are effective in treatment of intravenous therapy related infiltration.

Recommendations:
- A similar study can be replicated on a large sample in different setting to strengthen the findings.
- The study can be done on association between various demographic variables which were significant on larger samples.
- More researches need to be undertaken to compare the incidence of intravenous therapy related infiltration with the effectiveness of either of the hot fomentation or cold compress or other method.
- A follow up study can be conducted to evaluate the adherence to treatment to the particular intervention.
- A similar study can be conducted controlling all the extraneous variables.

References:
- Drug Information Services 966-2373 Refer to UNCH On Line Drug Formulary UNCHOSPITALS, Nursing Extravasation or Infiltration of Caustic Agents.