Impact of Cryotherapy on Pain Intensity at Puncture Sites of ArterioVenous Fistula among Children Undergoing Hemodialysis.

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Abstract

Pain inflicted by the insertion of large cannulae into the arteriovenous fistula (AVF) is a significant cause of concern for both children and adults on regular hemodialysis (HD). Cryotherapy as a non pharmacological pain, management is a complementary therapy having the advantage of being effective, less cost, easy to provide and safe. The aim of the study was to investigate the impact of cryotherapy on pain intensity at puncture sites of arteriovenous fistula among children undergoing hemodialysis. A total sample of 40 children undergoing HD using AVF was selected during six months from two hemodialysis Units affiliated to Cairo University. A quasi-experimental design (pre-post test) was chosen to conduct this study. Three tools were utilized for the study: A structured interview questionnaire schedule; subjective pain assessment tool (Wong-Baker Faces Pain Rating Scale); and objective pain assessment tools (a- Behavioral Observation Pain Rating Scale, b- A physiological assessment tool). The results of the study showed that more than half of children were females. More than two thirds of children and their mothers mentioned that children expressed their pain verbally. Less than two thirds of children preferred the same nurse to do AVF puncture and the majority of children do no prefer change puncture site to decrease pain sensation. The mean of Wong-Baker Faces Pain Scores during artery needle puncture reduced in the study group (days 3, 4) (0.82±0.84, & 0.75±0.80 respectively) than the control group (days 1, 2) (1.57±1.35, & 1.60±1.25 respectively). The study concluded that cryotherapy is effective in reducing subjective, objective pain scores, and physiological measures (respiration, heart rate, oxygen saturation, systolic and diastolic blood pressure). The study recommended that hemodialysis units should involve cryotherapy for managing needle puncture pain in the routine care for hemodialysis children.

Key words: Cryotherapy, hemodialysis, puncture pain, subjective, objective assessment, pain, children, nurses