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The effect of cold application on chest tube removal pain in heart bypass surgery patients

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Chest tube removal is deemed as a painful technique that may not respond well to palliative therapies, and there is no selected and recommended procedure and guideline to manage chest tube removal pain. This study is intended to examine the effect of cold application on reducing pain during and after chest tube removal. This study is a randomized clinical trial with a control group and which has been conducted on 90 hospitalized patients under heart bypass surgery in intensive care units where they had at least a pleural chest tube. Patients were divided randomly into two groups so that there were 45 participants in each group. Before chest tube removal, the ice bag was placed at the given point in cold application group for 20 minutes, and only usual interventions were executed for chest tube removal in the control group. The pain severity was measured in two groups before, during and 15 minutes after chest tube removal by visual analogue scale. ANOVA with repeated measures test were employed for data analysis. Results of the study showed that there was no statistically significant difference in the baseline pain score among the study groups ($P=0.18$). There was statistical significant difference between scores of pain severity during chest tube removal among cold application group (3.58 ± 1.09) and control group (4.73 ± 0.86) ($P<0.001$). There was no statistical significant difference between scores of pain severity 15 minutes after chest tube removal between two groups ($P=0.38$). In conclusion Cold application as non-pharmacological intervention may contribute to pain relief caused by CTR.