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## Application of cold cabbage leaf and cold gel pack for breast engorgement pain (RCT)

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**Background:** The effects of cold cabbage leaves and cold gel packs on breast engorgement management have been inconclusive. No studies have compared the effects of these methods on breast engorgement using a rigorous design.

**Objectives:** To examine the effectiveness of cold cabbage leaves and cold gel packs application on pain, hardness, and temperature due to breast engorgement, the duration of breast feeding and satisfaction.

**Design:** A randomized controlled three-group pre-test and repeated post-test study.

**Setting:** A private maternal and children's hospital in Singapore.

**Participants:** Mothers (n = 227) with breast engorgement within 14 days after delivery.

**Methods:** The mothers were randomly assigned into either cold cabbage leaves, cold gel packs, or the control group. Pain, hardness of breasts, and body temperature were measured before treatment. Two sets of post-test assessments were conducted at 30 minutes, 1 hour, and 2 hours after the first and second application. The duration of breastfeeding was measured up to 6 months. IBM SPSS 23.0 was used to analyses the data.

**Results:** Mothers in the cabbage leaves and gel packs

groups had significant reductions in pain at all post-intervention time points compared to the control group, starting from 30 minutes after the first application of cabbage leaves (mean difference= 0.38, p= 0.016) or gel packs (mean difference = -0.39, p= 0.013). When compared to the control group, mothers in the cabbage leaves group had significant reductions in the hardness of breasts at all post-intervention time points, and mothers in the gel packs group had significant reductions in the hardness of breasts at two time points (1 hour and 2 hours after the first and second application, respectively). Mothers in the cabbage leaves group had significant reductions in pain (mean difference = -0.53, p= 0.005) and hardness of breasts (mean difference= -0.35, p=0.003) at 2 hours after the second application compared to those in the gel packs group. Both interventions had no impact on body temperature. There was no significant difference in the durations of breastfeeding for mothers among the three groups at 3-month and 6-month follow-up. More mothers were very satisfied with the breast engorgement care provided in the cabbage leaves group compared to the other groups.

**Conclusion:** While cold cabbage leaves and cold gel packs can relieve pain and hardness in breast engorgement, the former had better effect, which can be recommended to postnatal mothers to manage breast engorgement trial.

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