Barrier Films or Dressings for the Prevention of Acute Radiation Dermatitis in Breast Cancer: A Systematic Review and Network Meta-Analysis

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Introduction

- Radiation dermatitis is a common treatment related side effect in breast cancer patients undergoing radiation therapy
- Barrier films or dressings have been shown to be effective in preventing radiation dermatitis in randomised controlled trials (RCTs) (Robijns et al. 2023)

Objective

- To determine the comparative efficacy of barrier films or dressings in the prevention of acute radiation dermatitis in breast cancer patients

Methods

- A systematic review search was performed on Embase, MEDLINE and Cochrane CENTRAL Registry of Clinical Trials from database inception until October 2023
- RCTs comparing barrier films or dressings to the standard of care or other interventions were included
- Summary odd ratios and mean differences using network meta-analysis with random effects were estimated with R. Results are considered significant if $p < 0.05$
- The study was registered on PROSPERO (ID CRD42023475021)

Results

- Met inclusion criteria: 14 RCTs involving 1776 patients
- Interventions analysed:
    1. 3M Moisturizing Double Barrier Cream
    2. 3M No Sting Barrier Film
    3. Hydrofilm
    4. Mepitel Film
    5. Silver Leaf Nylon Dressing
    6. StrataXRT

Mepitel Film, Hydrofilm and StrataXRT reduced the incidence of moist desquamation compared to standard of care

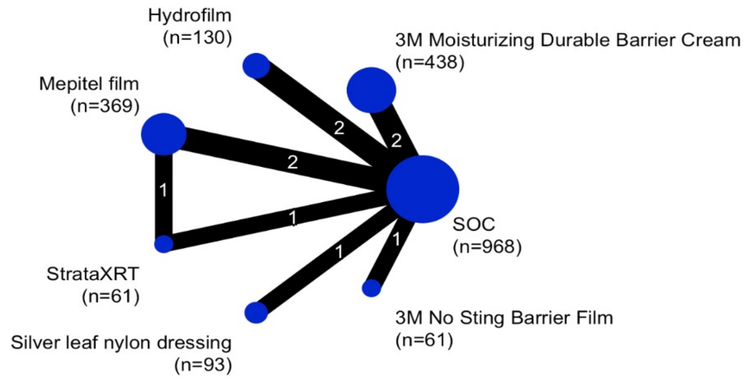

Figure 1: Network graph for moist desquamation

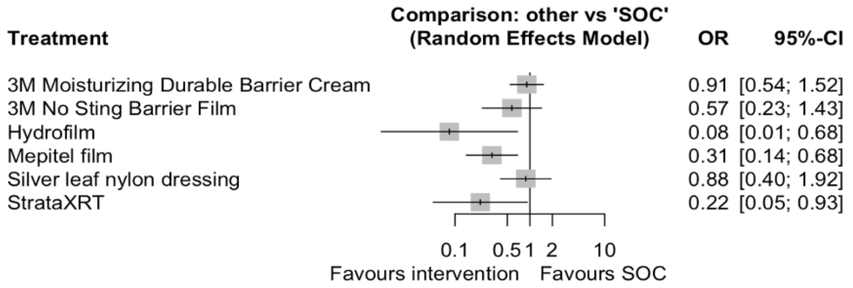

Figure 2: Forest plot of interventions compared to standard of care for moist desquamation

Most to least effective interventions in preventing moist desquamation according to P scores:

Hydrofilm (92.5%)
Mepitel Film (78.5%)
StrataXRT (70.1%)
3M No Sting Barrier Film (46.4%)
Silver Leaf Nylon Dressing (24.9%)
3M Moisturizing Double Barrier Cream (22.9%)
Standard of Care (14.7%)

- Hydrofilm and Mepitel Film were more effective in reducing pain, itchiness and burning sensation compared to standard of care ($p<0.01$ for all symptoms).
- Only four RCTs on Hydrofilm and Mepitel Film included patient-reported outcome assessments that allowed pooling for analysis.

Conclusion

- Hydrofilm and Mepitel Film were effective in preventing radiation dermatitis in breast cancer
- Other interventions require more robust data that include patient reported outcomes to confirm their benefits

Reference: Robijns J et al. Barrier Films and Dressings for the Prevention of Acute Radiation Dermatitis: A Systematic Review and Meta-Analysis. Support Care Cancer. 2023 Mar 17;31(4):219. doi: 10.1007/s00520-023-07671-0

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