Scar massage for hypertrophic burns scarring – A systematic review

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BACKGROUND Scar massage is used in burn units globally to improve functional and cosmetic outcomes of hypertrophic scarring following a burn injury however, there is minimal evidence to support the use of this therapy.

OBJECTIVE To review the literature and assess the efficacy of scar massage in hypertrophic burn scars.

METHODS MEDLINE, PubMed, Embase, CINAHL and the Cochrane Library were searched using the key words "burn", "burn injury", "thermal injury" AND "scar", "hypertrophic scar" AND "massage", "soft tissue mobilisation", "soft tissue manipulation". The articles were reviewed by the assessors using the PEDro scale and outcome measures on Range Of Motion (ROM), cosmesis (vascularity, pliability, height), pain scores, pruritis, and psychological measures of depression and anxiety were extracted.

RESULTS Eight publications were included in the review with 258 human participants and 15 animal subjects who received scar massage following a thermal injury resulting in hypertrophic scarring. Outcome measures that reached statistical significance included scar thickness as measured with ultrasonography ($p=0.001$; $g=-0.512$); depression (CES-D) ($p=0.031$; $g=-0.555$); pain as measured with VAS ($p=0.000$; $g=-1.133$) and scar characteristics including vascularity ($p=0.000$; $g=-1.837$), pliability ($p=0.000$; $g=-1.270$) and scar height ($p=0.000$; $g=-2.054$). Outcome measures that trended towards significance included pruritis ($p=0.095$; $g=-1.157$).

CONCLUSIONS It appears that there is preliminary evidence to suggest that scar massage may be effective to improve scar height, vascularity, pliability, pain, pruritis and depression in hypertrophic burns scaring. This review reflects the poor quality of evidence and lack of consistent and valid scar assessment tools. Controlled, clinical trials are needed to develop evidence-based guidelines for scar massage in hypertrophic burns scarring.

Key Words

hypertrophic, scar, burn, massage, soft tissue mobilisation, soft tissue manipulation

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