

7<sup>th</sup> International Conference on

# COSMETOLOGY, TRICHOLOGY AND AESTHETIC PRACTICES

May 21-22, 2018 Osaka, Japan

## Clinical efficacy and safety of negative-pressure wound therapy on flaps: A systematic review

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**Statement of the Problem:** Although flap transfer is a popular reconstructive procedure with a high success rate, it is associated with a high complication rate and low salvage rate. During the past decade, negative-pressure wound therapy (NPWT) has been increasingly applied to facilitate flap transfer and salvage flaps threatened by complications. It has achieved some success, but its efficacy and safety remain controversial because of the limited number of reports and lack of systematic reviews.

**Methodology:** English-language articles describing the application of NPWT on flaps were screened using predetermined inclusion and exclusion criteria. The articles were summarized and divided into groups based on the purpose of NPWT application. The complication rate, success rate, and salvage rate were obtained.

**Findings:** Among the 3395 articles searched, 16 articles describing 137 flaps were eligible. NPWT was applied on 105 (76.4%) newly transferred flaps to facilitate flap attachment and 32 (23.4%) complication-threatened flaps to relieve flap infection and venous congestion. In total, complications developed in 6 flaps, 3 of which were lost; thus, the complication rate was 5.7% (6/105) and the success rate was 97.1% (102/105). Only 1 of the 32 threatened flaps was not successfully salvaged; thus, the salvage rate was 96.9% (31/32).

**Conclusions:** NPWT may facilitate flap transfer with few side effects and help to rescue flaps threatened by infection and venous congestion with a high salvage rate. Further studies are needed to test the safety of NPWT application on flaps with arterial compromise.

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