

TOPICAL NEGATIVE PRESSURE VERSUS CONVENTIONAL TREATMENT OF DEEP STERNAL INFECTION IN CARDIAC SURGERY

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Aim: Deep sternal wound infection (DSWI) is a devastating and potentially life-threatening complication following cardiac surgery associated with a significant increase in mortality, morbidity and source utilisation. We sought to compare clinical outcome and survival of the conventional treatment involving closed irrigation with the application of the topical negative pressure therapy (TNP) in the first-line treatment of DSWI.

Methods: Analysis of 58 consecutive patients treated for DSWI at one institution, 26 patients (February 2002 through October 2004) underwent conventional treatment and 32 patients (November 2004 through October 2007) the application of TNP. Pre-operative, operative, and wound care characteristics were prospectively compared as well as first-line application failure rate, in-hospital and 1-year mortality of both treatment strategies.

Results: Pre-operative characteristics did not vary between both groups in terms of median age (71.2±7.9 vs. 66.6±11.0 years, NS), BMI (30.7±3.9 vs. 29.2±4.3, NS), male/female ratio (68/32% vs. 54/46%, NS), the presence of diabetes (60% vs. 54%, NS), or pulmonary disease (24% vs. 26%, NS). The median length of primary cardiac procedure (235±52.5 vs. 247±60.4 min, NS), the median stay at intensive care unit (432.6±516.3 vs. 404±480.6 min, NS), and median time to presentation of DSWI (14.1±17.1 vs. 17.4±10.0 days, NS) were also comparable. However, conventional therapy was associated with a significant increase in first-line failure rate (38% vs. 5%, p<0.01), in-hospital mortality (28% vs. 5%, p<0.01) and 1-year mortality (38% vs. 11%, p<0.05) in comparison with TNP.

Conclusions: TNP is superior over closed irrigation in the treatment of DSI in cardiac surgery. Very low failure rate of first-line application, significant decrease in in-hospital as well as 1-year mortality were demonstrated in the TNP group.