

Vacuum-assisted closure for deep sternal wound infections in cardiac surgery

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Introduction: Post-operative deep sternal wound infection (DSWI) is a quite uncommon complication in cardiac surgery with high mortality and morbidity rates. Since vacuum-assisted closure (VAC) has shown promising results, we assessed its impact on the management of DSWI in terms of the assessment of contributing risk factors.

Methods: Retrospective study of 52 consecutive patients who have been treated with VAC for DSWI out of a total of 83 patients with DSWI (out of 7234 cardiac operations) in a single institution (study period: September 2003- March 2012). Statistical analysis (Kaplan-Meier survival analysis, correlation and multiple regression) of the patient data was undertaken in assessing the contribution of the risk factors to the outcome of patients.

Results: Of the 52 patients (35 M: 17 F), 88.5% (n=46) were solely treated with VAC therapy and 11.5% (n=6) had additional plastic surgical intervention. Follow-up was complete (mean: 33.8 months) with an overall mortality rate of 26.9% (n=14) of whom 50% (n=7) died in hospital. No death was related to VAC complications. Patient outcomes were affected by pre-operative, intra-operative and post-operative risk factors. The two risk factors showing the greatest correlation on the survival of the patients were the logistic EuroSCORE and the post-operative hospital stay ($r=-0.25$, $p<=0.05$ and $r=-0.21$, $p>=0.05$ respectively).

Conclusion(S): Logistic EuroSCORE, post-operative hospital stay, advanced age, chronic obstructive pulmonary disease (COPD) and long-term corticosteroid treatment appear to be significant contributing factors on the long-term survival of patients treated with VAC.

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