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[O67] EFFICACY OF NEGATIVE PRESSURE WOUND TREATMENT (NPWT) IN THE MANAGEMENT OF SEPTIC TRAUMA CASES

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Aim: Negative pressure wound treatment (NPWT) has been widely adopted in the management of septic wound complications or prophylactically after large surgeries. Recent publications have indicated the necessity of further investigations to support the use of NPWT with more evidences. Therefore, the purpose of this pilot-study was to investigate the efficacy of VAC-assisted dressing systems in the treatment of septic trauma cases.

Method: We analyzed data of 16 retrospective cases following traumas and septic soft tissue surgeries around the hip and knee. The collected data consisted of bacterial cultures, inflammatory markers (WBC, CRP/HCRP) and body temperature, taken periodically during treatment. Also recorded were the time periods the vacuum pump was used during treatment. To increase the number of measurements and to facilitate subsequent data analysis, the measurements were interpolated to regularly sampled curves with a sampling rate of one day. We used cross-plots and linear regression analysis to investigate trends in the data: 1) while the vacuum pump was switched on and 2) while it was switched off.

Results: The analysis shows that the average WBC and CRP/HCRP values decline in the first days after initiation of the VAC treatment. WBC values decline in the first four days of VAC treatment (linear regression, $R^2=0.960$). CRP/HCRP values decline in the first thirteen days (linear regression, $R^2=0.952$). No meaningful trends were observed in body temperature measurements. Importantly, there is a trend for an increase of WBC and CRP/HCRP, following the 4th and 14th days, respectively. These findings suggest that the prolonged use of VAC treatment may result in secondary relapses.

Conclusions: Our results indicate a marked decrease of inflammatory markers during the first two weeks, confirming the efficacy of NPWT in the management of septic wounds after traumas. Importantly, our analyses also show a periodic relapse with the prolonged use of NPWT. However, further studies are needed with a larger, standardized population to confirm these findings.