SIGNIFICANT REDUCTION OF DEEP STERNAL WOUND INFECTIONS POST CARDIAC SURGERY BY THE POSTHORAX® VEST

A SINGLE CENTER OBSERVATIONAL COHорт STUDY IN 2200 PATIENTS

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UHZ Hamburg

The Posthorax® Experience

- March 2010: Introduction of obligatory vest for all patients undergoing cardiac surgery via median sternotomy
- Analysis of single center Posthorax® efficacy comparing: “vest cohort” (03-12/2010) with “no vest cohort” (03-12/2009)
UHZ Hamburg: Overall Incidence of WHC

Overall Incidence of WHC
Superficial (SWI) & Deep Sternal Wound Infections (DSWI)

- 2009 No Vest: 2.74%
- 2010 Vest (incl. Refused and Not Received): 3.53%

p = n.s.

UHZ Hamburg: Incidence of DSWI & Mediastinitis

DSWI & Mediastinitis

- 2009 No Vest: 0.88%
- 2010 Vest (incl. Refused and Not Received): 2.39%

p < 0.00438
UHZ Hamburg: Relationship WHC to BMI

% Patients & BMI

UHZ Hamburg: Postoperative Hospital Stay

HOSPITALIZATION

days

POST OPERATIVE DAYS
UHZ Hamburg: DSWI Subgroup Analysis

DSWI

2009 No Vest 2010 Refused 2010 Not Received 2010 Vest
2.39% 7.95% 13.33% 0.10%

UHZ Hamburg: Cumulative Cohort Comparison

Infection Related Hospitalization

2009 No-Vest 2010 Vest (incl. Refused and Not Received)
1676 1350

Savings: 326 days
Summary

- The Hamburg Experience with the Posthorax® vest reproduces results of multicenter trial
- Use of the Posthorax® vest
  - led to a significant reduction, if worn according to protocol even eliminated sternal dehiscence and mediastinitis
  - led to a significant reduction of infection related hospital stay
- Patients refusing the vest had identical preop. and surgical risk profile – key issue seems non-compliance
- Preoperative factors seem less important for the development of WHC
- Key risk factors rather related to prolonged surgery and postop. complications

Conclusion

Sternal instability seems to be the single most important factor for deep wound healing infections and mediastinitis post cardiac surgery